Health Information and Quality Authority

An tÚdarás Um Fhaisnéis agus Cáilíocht Sláinte

Health Technology Assessment of Scheduled Surgical Procedures

Cataract Surgery

April 2013

Safer Better Care

About the Health Information and Quality Authority

The Health Information and Quality Authority (HIQA) is the independent Authority established to drive continuous improvement in Ireland's health and personal social care services, monitor the safety and quality of these services and promote person-centred care for the benefit of the public.

The Authority's mandate to date extends across the quality and safety of the public, private (within its social care function) and voluntary sectors. Reporting to the Minister for Health and the Minister for Children and Youth Affairs, the Health Information and Quality Authority has statutory responsibility for:

- **Setting Standards for Health and Social Services** – Developing person-centred standards, based on evidence and best international practice, for those health and social care services in Ireland that by law are required to be regulated by the Authority.

- **Social Services Inspectorate** – Registering and inspecting residential centres for dependent people and inspecting children detention schools, foster care services and child protection services.

- **Monitoring Healthcare Quality and Safety** – Monitoring the quality and safety of health and personal social care services and investigating as necessary serious concerns about the health and welfare of people who use these services.

- **Health Technology Assessment** – Ensuring the best outcome for people who use our health services and best use of resources by evaluating the clinical and cost effectiveness of drugs, equipment, diagnostic techniques and health promotion activities.

- **Health Information** – Advising on the efficient and secure collection and sharing of health information, evaluating information resources and publishing information about the delivery and performance of Ireland's health and social care services.

Table of Contents

1 Cataract Surgery

1.1 Scope of this health technology assessment

This health technology assessment (HTA) evaluates the appropriateness and potential impact of introducing clinical referral or treatment thresholds for cataract surgery, a high volume scheduled surgical procedure within the publicly funded healthcare system in Ireland. The effectiveness of cataract surgery may be limited unless undertaken within strict clinical criteria. This report is one of a series of HTAs of scheduled surgical procedures; details of the background to the request and general methodology are provided in the separate 'Background and Methods' document.[1]

The scope of this HTA is to investigate clinical referral and treatment thresholds for surgery for adults presenting with symptoms of cataract in Ireland. It does not cover juvenile cataract surgery or cataract surgery for lens-induced disease (phacomorphic glaucoma, phacolytic glaucoma, and other lens-induced disease) or cataract surgery in those with concomitant ocular disease that requires clear media (such as diabetic retinopathy). Inputs from an expert advisory group along with a review of the clinical and cost-effectiveness literature were used to inform the criteria. Additionally, the budget impact and resource implications were assessed, as appropriate.

1.2 Surgical indication

A cataract occurs when the lens, which is used to fine focus the image within the eye, becomes clouded (opacification). It usually develops over a period of time causing gradual eyesight deterioration including increasingly blurred and cloudy vision, difficulty with vision at night, sensitivity to light and glare; it may eventually lead to blindness. Cataracts may develop in one eye only or in both eyes at the same time, although there may be significant difference in the degree of cataract present at a single point in time. The rate of decline in vision is variable and unpredictable.[2] Poor vision is a risk factor for falling which can cause major clinical injuries, hospital admissions, and limited independence.[3]

Cataracts are a common problem. Although they can occur at any age, incidence increases with increasing age; by the age of 75, a quarter of all people will have developed a cataract.[4] Other risk factors for cataracts include: diabetes mellitus, smoking, alcohol, corticosteroid use and high ultraviolet B exposure.[4;5]

1.3 Surgical procedure, potential complications and alternative treatments

Surgical treatment involves removing the patient's cloudy lens and implanting an artificial lens. Phacoemulsification is the preferred technique for cataract surgery. It involves using an ultrasound probe to break the opacified lens into tiny pieces which are then removed through a small incision in the cornea. This technique is used in the majority of cases in Ireland. However, there are a small number of instances where large-incision, manual, extracapsular cataract extraction may be the preferred option.[4] An intra-ocular lens is then inserted through the incision.

During early cataract development, visual improvement may be achieved through a number of non-surgical means including: changes in glasses prescriptions, strong bi-focals, tinted lenses, dilation of the pupil for small central cataracts, magnifying lenses and appropriate lighting.[6-8] However, without cataract surgery, vision in the affected eye will continue to deteriorate and the only effective treatment to restore vision is the surgical replacement of the affected lens.

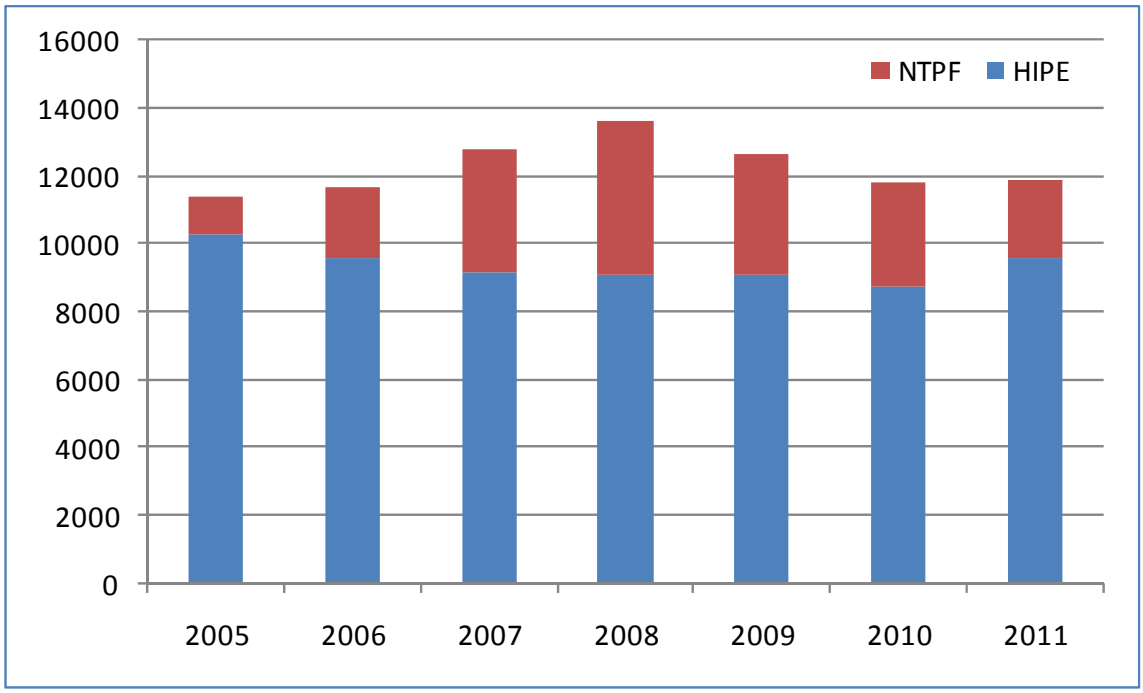
Cataract surgery is widely perceived to be a safe procedure. Risks include anaesthetic and surgical complications. The majority of cases are done under local anaesthetic which has reduced the potential risks. Serious complications include endophthalmitis (0.02%-1.16%[2;4;7]), cystoid macular oedema (1.2%-3.3%[2;4]), retinal detachment (0.26%-4%[2]), haemorrhage (0.06%-0.5%[2;4]) as well as toxic anterior segment syndrome, persistent corneal oedema, decreased vision and general complications associated with surgery in the elderly.[2;6] The most common post-operative complication is posterior capsular opacity which may occur in up to 40% of patients 10 years postoperatively,[2;6] although it is less common following phacoemulsification. It can be treated with Nd:YAG laser capsulotomy surgery.

1.4 Current practice in Ireland

Cataract surgery is a high volume surgery in Ireland: extracapsular crystalline lens extraction by phacoemulsification has featured in the top 20 day case procedures performed annually in public hospitals since 2005 and accounts for approximately 1% of all day case procedures.[9] In 2011, data from the Hospital In-Patient Enquiry (HIPE) Scheme indicate that there were approximately 9,500 discharges from public hospitals for patients who had undergone cataract surgery, using the procedure codes specified in Appendix 1.[10] Eighty percent of these patients were over 65 years of age. Approximately 2,300 additional cataract procedures were procured by the National Treatment Purchase Fund (NTPF) and performed in private hospitals,[11] so that, in total almost 12,000 cataract procedures were provided by the publicly funded

healthcare system in 2011. The number of procedures provided through the publicly funded healthcare system increased steadily between 2005 and 2008, since stabilising at approximately 12,000 procedures per annum (Figure 1.1).

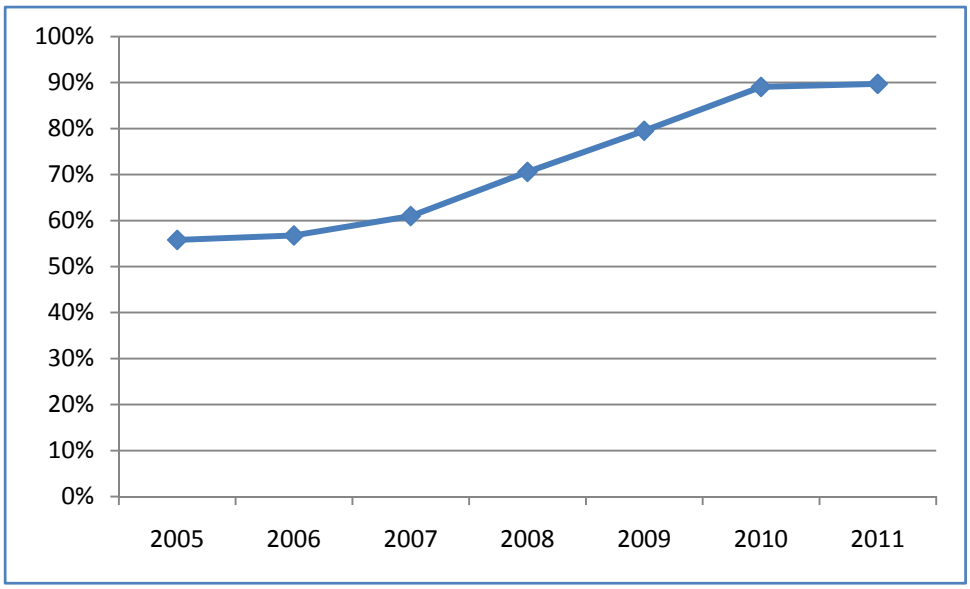
Figure 1.1 Number of cataract procedures provided through the publicly funded healthcare system, 2005-2011*



*Source: HIPE (Hospital In-Patient Inquiry) Scheme and NTPF (National Treatment Purchase Fund). * HIPE ICD-10AM/ACHI procedure blocks 0195-0202, all procedures. Notes: one individual may undergo up to two cataract procedures. HIPE data includes all activity in publicly funded hospitals including procedures in patients that used private health insurance*

The majority of patients are suitable for day case surgery under local anaesthesia, with a large shift towards day case surgery seen in recent years. In 2005, just 56% of procedures were treated as day cases compared to 90% of procedures in 2011 (see Figure 1.2). The average length of stay for those treated as inpatients was 3.3 days in 2011.

Figure 1.2 Percentage of cataract procedures in publicly funded hospitals performed as day cases 2005-2011*



** HIPE ICD-10AM/ACHI procedure blocks 0195-0202, all procedures. Note: one individual may undergo up to two cataract procedures. This table does not include procedures procured by the NTPF for the publicy funded system in private hospitals.*

The rate of cataract surgery varies across the four Health Service Executive (HSE) regions with a significantly higher rate seen in the HSE West region in 2011. There is also considerable regional variation in day case rates; 95% of cataract procedures in the Western region were conducted as day case procedures in 2011 compared to 82% of procedures in the HSE South region (Table 1.1).[10] It is possible that the proportion treated as day cases may rise, although a full 100% will not be achievable, as a small number of patients will continue to require surgery under general anaesthesia and need in-patient treatment (e.g., co-existing ocular disease and unrelated conditions that limit the ability to conduct surgery safely under local anaesthetic such as a severe cognitive impairment).[12]

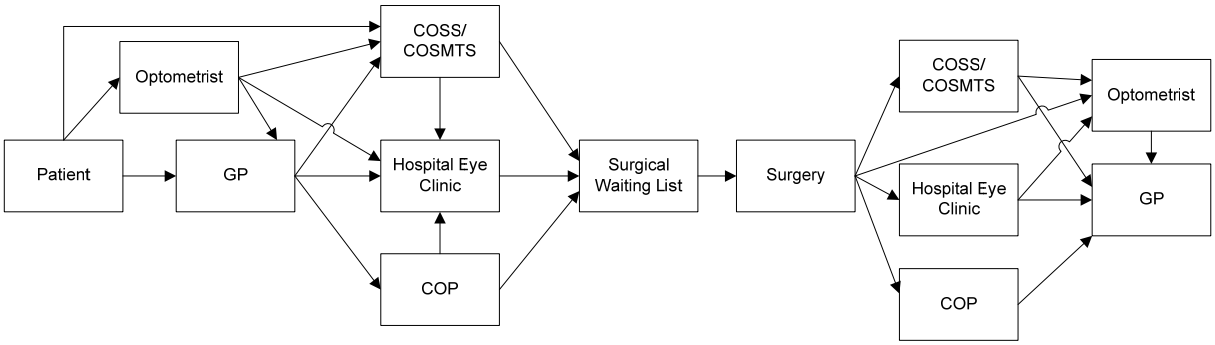
Table 1.1 HIPE data per HSE region (2011)

HSE region	Number of cataract procedures*	Directly standardised rate per 10,000**	Inpatient bed-days	% day case	Average. age
Dublin North East	1,538	15.4	690	94%	70
Dublin Mid Leinster	2,480	18.8	704	87%	71
South	2,105	15.4	993	82%	74
West	3,462	28.3	862	95%	74

** HIPE ICD-10AM/ACHI procedure blocks 0195-0202, all procedures. Note: one individual may undergo up to two cataract procedures. This table does not include procedures procured by the NTPF for the publicy funded system in private hospitals.*
*** Rates are standardised for age and based on area of residence, Census 2011.[9]*

Although for the majority of patients, potential symptoms of a cataract will first be detected by an optometrist, standard practice in the publicly funded healthcare system is that patients must be referred by their GP or community-based ophthalmologist to obtain a hospital outpatient appointment with an ophthalmic surgeon. Community-based ophthalmologists can also refer patients directly to surgical waiting lists without the need for a hospital outpatient appointment, although this practice varies regionally. The current pathways for the referral, treatment and post-operative follow-up of patients undergoing cataract surgery in the publicly funded healthcare system are illustrated in Figure 1.3.

Figure 1.3 Current referral, treatment and follow-up pathways for publicly-funded patients undergoing cataract surgery[13]



Key – COSS: Community Ophthalmic Services Scheme; COSMTS: Community Ophthalmic Services Medical Treatment Scheme; COP: community ophthalmic physician; GP: general practitioner

The length of time a patient must wait to be reviewed by an ophthalmologist varies according to the referral pathway. There is currently no published data for waiting times for hospital outpatient appointments for ophthalmology. Data from the HSE Performance Report for October 2012 indicated that there were over 388,000 patients waiting for a first outpatient appointment (across all specialties), 48% of who were waiting over six months and 29% over 12 months.[1] It is reported that waiting times for review by Community Ophthalmic Physicians (COP) is similar to that for hospital eye clinics.[13] Ophthalmologists in the Community Ophthalmic Services Scheme (COSS) and the Community Ophthalmic Services Medical Treatment Scheme (COSMTS) operate as private contractors and are paid on a fee per service basis. New patients referred to COSS/COSMTS providers are typically seen within four to six weeks.[13]

At present, there are no standardised referral criteria that are routinely used to prioritise referrals. This can result in unnecessary outpatient appointments and difficulties in triaging patients according to symptom severity. In February 2012, 6%

of all outpatient referrals were for ophthalmology.[14] Although all patients will eventually need cataract surgery, it is suggested that a significant percentage of those referred to outpatient clinics are considered not appropriate for surgical treatment when first seen and are instead scheduled for review in six to 12 months. The number of potentially inappropriate referrals is unknown: data from the NTPF (2007-2011) indicate that across all specialties, 38% of patients referred for outpatient surgical review are referred back to the primary care system without undergoing surgery or being referred for further diagnostic tests.[15] It is suggested that this rate may be lower in cataract patients with only 10-20% considered inappropriate for surgical treatment when first seen.[13] As of December 2012, 4,266 people were on surgical waiting lists for cataract surgery, with almost 1 in 5 (19%) waiting over six months.[17;18]

Post-surgery patients need a follow-up appointment to ensure the eye is recovering well. Generally this is carried out in a hospital as an outpatient appointment or by the referring community-based ophthalmologist; a pilot post-cataract referral scheme is currently operating in the northwest where some follow-up appointments are now being carried out by optometrists in the community.[19]

2 Clinical referral/treatment threshold

2.1 Review of the literature

A literature search was conducted during January 2013. The approach and general search terms are described in Appendix 1 in the Background and Methods document accompanying this document. A summary of the results of this search is included in Table 2.1.

Table 2.1 Included evidence sources

Publication Type	Number	References
Clinical guidelines	7	(2;4-8;20)
Literature reviews	2	(21;22)
Clinical studies	3	(23-25)
Cost-effectiveness studies	1	(26)

2.2 Clinical evidence

For a cataract to be clinically significant, it must cause significant reduction in visual acuity, functional ability or both. Seven clinical guidelines for cataract surgery were found that specifically mention referral criteria for cataract surgery (Appendix 2).[2;4-8;20] These guidelines highlight and recommend best practice based on the available evidence base. Within the UK National Health System (NHS), a number of primary care trusts (PCTs) have set their reimbursement policy for cataract surgery through the creation of defined clinical referral criteria, however, a recent evaluation found that the majority of the criteria used were not based on national guidance or scientific evidence.[27] Some examples of these referral thresholds are included in Appendix 2.[28-33]

The Snellen Visual Acuity test is widely used to assess distance refractive error (such as hyperopia, myopia and astigmatism) in healthy eyes. It forms an explicit element of the referral criteria in guidelines in New Zealand,[20] British Columbia,[6] and the US[5] and, through its use in assessing legal driving limits, it is also considered in other Canadian guidelines.[7;8] The Snellen visual acuity test also features in all PCT thresholds.[28-33] Visual standards for driving in Ireland, which have been endorsed by the Irish College of Ophthalmologists, require a visual acuity of 0.5 (6/12) or greater and also include specific guidelines on contrast sensitivity and glare,[34] both of which can affect those with cataracts. The medical fitness to drive guidelines, which include the visual standards, were updated in January 2013, with no major change to the required visual standards.[35]

There is evidence that using Snellen acuity alone is not a good predictor for those who will benefit from cataract surgery,[2] and self-reported information relevant to a patient's every day visual experience in the context of their own environment should be used in conjunction with standard visual function testing when deciding on surgery.[4] In addition to tests for visual acuity, the impact on the functional disability of the patient forms one of the criteria for referral for cataract surgery in all the guidelines reviewed.[2;4-8;20] How the functional disability is assessed varies across guidelines with some using a defined questionnaire[20] and others providing no defined criteria apart from a subjective assessment of the impact on the patient's lifestyle.[4]

Assessing the extent to which a patient's functional visual ability has been reduced by a cataract is critical in identifying patients suitable for referral for cataract surgery.[22] This is dependent on the individual's own circumstances; for instance those who drive or require good eyesight for employment may experience a greater reduction in their functional ability than those who do not. There are a number of validated

instruments that can be used to assess visual functional status: Bernth-Peterson, Visual Activities Questionnaire, Activities of Daily Vision Scale (ADVS), Visual Function-14 (VF-14), Visual Function-8R (VF-8R), National Eye Institute Visual Function Questionnaire (NEI-VFQ) and Catquest-9SF. However, currently there is no single universally accepted questionnaire in clinical use.[2;4]

Tools have also been developed that combine both visual acuity and functional disability into one questionnaire. For example Churchill et al.[24] developed a short instrument that combines five aspects: visual acuity; clinical modifiers; ability to work, give care, live independently; additional disabilities; and extent of visual impairment into a single score. A modified version of this is in use in New Zealand (included in Appendix 2).[20] The Western Canada priority criteria tool[36] combines visual acuity, glare, ocular co-morbidity, visual impairment, other disability, ability to live independently and a clinical urgency rating; this has been validated and is used in Western Canada.[23] These tools, along with highlighting which patients require surgery, also apply a scoring system that enables prioritisation of those patients with the most urgent clinical need. How they prioritise patients varies across tools with some applying more weight to lifestyle issues and others more to visual acuity measures.[37] It is not clear which tool would be most relevant in the Irish context.

There is evidence that a formal pre-operative assessment of the appropriateness of cataract surgery predicts post-operative improvement, with surgeries in those deemed as inappropriate experiencing a much smaller or no improvement post-surgery.[25] Hodge et al.[21] performed a systematic review of 27 studies that investigated the consequences of waiting for cataract surgery. They found those that waited longer than six months experienced more vision loss, a reduced quality of life and increased falls compared with those waiting less than six weeks. However, the outcomes for patients waiting between six weeks and less than six months were unclear with little evidence available on the effect of vision loss or functional ability on these outcomes.

2.3 Cost-effectiveness evidence

Cataract surgery is considered an effective and cost-effective procedure, both in developed and developing countries.[38] However, its cost-effectiveness for those patients who gain little or no significant improvement in visual acuity or functional ability is less clear.

In a study published in 2006, Naeim et al.[26] examined the cost-effectiveness of cataract surgery versus watchful waiting in patients who had less than a 30% predicted probability of reporting improvements in visual function after surgery in the US. Patients were randomised to both groups; effectiveness was evaluated at six months post-surgery using the ADVS and the Health Utilities Index (HUI3). A societal

cost perspective was adopted. They estimated an incremental cost-effectiveness ratio (ICER) of US$38,288 per quality-adjusted life year (QALY); this was considered cost-effective. However, for a subgroup of patients with a lower predicted probability of improvement of 20%, the ICER was US$53,500/QALY. They concluded that there may be a subgroup of patients, for whom a strategy of watchful waiting may be equally effective and considerably less expensive.[26]

2.4 Budget impact and resource implications

Without any clear guidance on referral criteria in place for cataract surgery in Ireland, there is inevitably variation in referral patterns to outpatient clinics. As noted in Section 1.4, across all specialties approximately 38% of patients seen in outpatient clinics between 2005 and 2011 through the NTPF were referred back to their GP without undergoing surgical treatment or being sent for further testing.[39] For cataract surgery it is suggested that between 10% to 20% of those referred to outpatient clinics are unsuitable for surgery when first seen, and are typically scheduled for review in six to 12 months.[12] Implementing referral criteria would potentially reduce the number of unnecessary hospital outpatient appointments leading to a more efficient use of resources and a reduction in waiting times for patients.

The number of cataract surgeries performed is not expected to reduce. Given the rapidly rising population aged 65 years and older, need and demand for surgery is likely to increase. Instead, it is hoped that introducing clinical referral and treatment thresholds would lead to an improved patient pathway: a reduction in inappropriate referrals would reduce the demand for outpatient appointments; the use of standardised referral criteria would enable better triaging of those referred for review. This should lead to those with a higher clinical need being seen and undergoing surgery earlier, with a potential reduction in waiting times for both outpatient appointments and surgery. The current estimated annual national cost of cataract surgery is €2.67 million, based on the latest Casemix costs (Table 2.2). In 2011, cataract procedures accounted for approximately 36% of all surgical ophthalmology procedures and approximately 33% of all surgical ophthalmology costs.[10;40] Further increases in the percentage of patients undergoing surgery as a day case would reduce the overall cost of this care, releasing beds and resources for use and thus improving efficiency.

Table 2.2 HSE inpatient and day case acute hospital activity and costs summarised by diagnosis-related group (based on 2011 costs and activity)[40]

DRG code	Description	% of cataract procedures	Cost/case (€)
C03	Retinal procedures (day case)	5.1%	1,155
C03Z	Retinal procedures (inpatient)	2.2%	4,408
C15	Glaucoma/CX cataract procedures (day case)	0.8%	1,418
C15A	Glaucoma/CX cataract procedures (in-patient)	0.7%	5,926
C16	Lens procedures (day case)	83.6%	1,184
C16Z	Lens procedures (in-patient)	7.0%	4,028
	Other procedures	0.3%	
-	Outpatient appointment		130

Data summary from HSE National Casemix Programme Ready Reckoner, 2013 based on the 2011 inpatient and day case activity and costs reported by 38 hospitals participating in the programme that year.

2.5 Advice on clinical referral / treatment threshold

Due to a lack of consensus in the international guidelines, there is no one tool that can be recommended for use as a referral threshold for cataract surgery. There is a need for clear surgical referral criteria. These should consist of a measure of visual acuity in conjunction with a measure of the effect of the cataract on a patient's lifestyle. This should be applied in the primary care setting prior to referral to an outpatient clinic, and should be quick and easy to use, and be able to distinguish between those patients who would benefit most from surgery, how urgently they need to be seen and those who would be better served through watchful waiting or non-surgical interventions. Therefore, the following criteria are advised:

The presence of a cataract does not in itself indicate a need for surgery. The decision to refer a patient for surgery should be based on consideration of their visual acuity, visual impairment and their potential for functional benefits.

Cataract surgery is justified and appropriate when the patient experiences one, or more of the following:

- The best corrected visual acuity score is 6/12 or worse in the affected eye.
- Difficulty carrying out everyday tasks such as recognising faces, watching TV,

cooking, playing sport/cards etc..
- Reduced mobility, unable to drive or experiencing difficulty with steps or uneven ground.
- Ability to work, give care or live independently is affected.

A patient should not be referred for cataract surgery if:

- The patient does not desire surgery.
- Glasses or other visual aids provide functional vision satisfactory to the patient.
- The patient's quality of life or ability to function is not compromised.
- The patient has concomitant ocular disease where functional improvement is unlikely.

Patients who are not referred for surgery should remain under the care of their primary care practitioner (GP, community ophthalmologist, optometrist) and be reassessed at one- to two-year intervals as appropriate.

Exceptions to the above criteria include: juvenile cataract, lens-induced disease (such as phacomorphic glaucoma, phacolytic glaucoma, and other lens-induced disease), and cataracts in patients with concomitant ocular disease that require clear media (such as diabetic retinopathy) for which cataract surgery is indicated. Individuals with any one of these indications, or where these are suspected, should be referred to an ophthalmologist.

3 Discussion

Cataracts are a progressive disorder gradually leading to a reduction in sight, with surgery the only means to restore vision. However, in the early stages, patients can be effectively managed through non-surgical interventions – undergoing surgery at this time would provide little clinical benefit, but entails all the associated risks and costs. Without any clear referral criteria in place in Ireland for cataract surgery, this has inevitably led to variation in the referral patterns, with estimates of 10% to 20% of those referred to outpatient clinics considered not suitable candidates for surgery when first seen. It is suggested that the practice of early referral is caused by the long waiting lists for outpatient appointments and surgery, with primary care practitioners resorting to referring their patients earlier than necessary in the anticipation that the patient's eyesight will have deteriorated sufficiently to warrant surgery by the time they are reviewed. However, this ultimately makes the waiting lists less efficient. The Council of Europe's report on managing waiting lists states

that patients should not be added to a waiting list to reserve a place against the possibility that in the future treatment might be warranted.[41]

As noted, the number of cataract surgeries performed in the publicly funded system is not expected to reduce as a result of implementing stated treatment thresholds. Given the rapidly rising population aged 65 years and older, need and demand for surgery is likely to increase. Feedback obtained from the Expert Advisory Group and through public consultation suggests that many ophthalmic surgeons already apply a treatment threshold similar to that advised. However, the implementation of standardised referral criteria is relevant; the aim of such criteria is to ensure that all patients receive the right care, at the right time and in the right setting. By implementing referral thresholds, patients would attend hospital only when appropriate, and remain under the care of their primary care practitioner until then. This would potentially improve the patient pathway through reducing unnecessary hospital appointments, leading to a reduction in waiting times for these appointments, improving access for those with the greatest clinical need and providing a more efficient use of resources.

Although beyond the scope of the HTA, feedback was obtained through the consultation process regarding the variability in the duration of the patient's elective surgical journey depending on the referral pathway. It was noted that there is regional variation in referral pathways, particularly in relation to the ability of community-based ophthalmologists (operating through the COP, COSS and COSMTS schemes) to list patient directly for surgery without the need for further review by a hospital-based ophthalmologist. It is suggested that the additional steps in some regions could add 12-24 months to the overall patient journey. The use of standardised referral pathways was recommended.

Again, athough beyond the scope of this HTA, feedback was also obtained in relation to the significant concerns regarding the ability of the HSE to effectively implement referral and treatment thresholds that will allow the timely treatment of patients in need of surgery given the rising demand for surgery and the existing capacity constraints in the system. There are a number of examples internationally where referral criteria have been agreed and implemented. However, while there is agreement that criteria used should consider both visual acuity and the effect on the patient's lifestyle, there is no consensus on how this should be achieved, with a range of different systems in use. The preferred option is to use a short validated triage tool that combines aspects of vision and lifestyle and that could be implemented in the primary care setting by a GP, community ophthalmologist or optometrist. The tool used in New Zealand included in Appendix 2 is an example of this type of triage tool. Use of such a triage tool could help ensure that patients are prioritised based on clinical need, leading to greater clarity and transparency in the

system, allowing for improved equity of access, and facilitating clinical audit. Public consultation indicated that, in general, there would be support for the implementation of such a tool in Ireland with broad consensus that equal weighting should be applied to visual acuity and lifestyle issues. Concerns were expressed that use of a triage tool should not detract from the patient-dialogue necessary to reach a patient-centred treatment plan.[13] The use and promotion of electronic referrals was also highlighted as a means to minimise bureaucracy, assist triage and standardise communication between those involved in eye care services.[13]

The suggested referral criteria reflect existing best practice in Ireland. Consistent application of the criteria through the healthcare system, particularly if facilitated by use of a standardised referral tool, should assist patient triage, bring greater transparency, ensure equity of access based on clinical need and allow maximal benefit to be gained from existing resources.

4. References

(1) Health Information and Quality Authority. *A series of health technology assessments (HTAs) of clinical referral or treatment thresholds for scheduled surgical procedures: Background and Methods.* Dublin: Health Information and Quality Authority; 2013.

(2) American Academy of Ophthalmology. *Cataract in the Adult Eye - Preferred Practice Pattern* [Online]. Available from: http://one.aao.org/CE/PracticeGuidelines/PPP_Content.aspx?cid=a80a87ce-9042-4677-85d7-4b876deed276. Accessed on: 20 December 2012.

(3) Harwood RH, Foss AJ, Osborn F, Gregson RM, Zaman A, Masud T. Falls and health status in elderly women following first eye cataract surgery: a randomised controlled trial. *Br J Ophthalmol.* 2005; 89(1): pp.53-9.

(4) The Royal College of Ophthalmologists. *Cataract Surgery Guidelines*. London: The Royal College of Ophthalmologists; 2010.

(5) American Optometric Association. *Care of Adult Patient with Cataract-Quick Reference Guide* [Online]. Available from: http://www.aoa.org/documents/QRG-8.pdf. Accessed on: 14 January 2013.

(6) British Columbia Medical Association. *Cataract - Treatment of Adults* [Online]. Available from: http://www.bcguidelines.ca/guideline_cataract.html. Accessed on: 20 December 2012.

(7) Canadian Ophthalmological Society Cataract Surgery Clinical Practice Guideline Expert Committee. Canadian Ophthalmological Society evidence-based clinical practice guidelines for cataract surgery in the adult eye. *Can J Ophthalmol.* 2008; 43 Suppl 1 pp.S7-57.

(8) Toward Optimized Practice. *Guideline for Surgical and Non-Surgical Management of Cataract in the Otherwise Healthy Adult Eye* [Online]. Available from: http://www.topalbertadoctors.org/cpgs.php?sid=18&cpg_cats=76. Accessed on: 17 December 2012.

(9) Health Research and Information Division. *Activity in Acute Public Hospitals in Ireland 2011.* Dublin: ESRI; 2012.

(10) HIPE. *Hospital In-Patient Enquiry (HIPE) Portal data*. 2013. Ireland, ESRI.

(11) National Treatment Purchase Fund. *NTPF Out-Patient Pilot Programme Data 2005 - 2011*. Ireland: NTPF; 2013

(12) Mr Paul Connell, Consultant Vitreoretinal Surgeon Mater Misericordiae University Hospital Dublin and member of the Expert Advisory Group for the HIQA HTA on Scheduled Surgical Procedures. Personal communication. 2013. Date received: 16 January 2013.

(13) Public Consultation Feedback. Personal communication. 13 March 2013.

(14) HSE. *Outpatient Data Quality Programme Update February 2012* [Online]. Available from: http://www.hse.ie/eng/services/Publications/corporate/performancereports/Outpatient_Data_Quality_Programme.pdf. Accessed on: 24 January 2013.

(15) National Treatment Purchase Fund. *NTPF Out-Patient Pilot Programme Data 2005 - 2011*. 2013. Ireland, NTPF.

(16) Expert Advisory Group for the HIQA HTA on Scheduled Surgical Procedures. Personal communication. 24 January 2013.

(17) National Treatment Purchase Fund (NTPF). *Hospital elective surgery waiting list data (December 2012)*. Ireland, NTPF; 2012.

(18) Lottering, L. Personal communication. 2012.

(19) Ms.Lynda McGivney Nolan, Optometric Advisor Association of Optometrists Ireland and member of the Expert Advisory Group for the HIQA HTA on Scheduled Surgical Procedures. Personal communication. 5 February 2013.

(20) New Zealand- National Referral Guidelines. *Ophthalmology Referral Guidelines and Prioritisation Criteria* [Online]. Available from: http://www.eyenz.com/provider_info/Ophthalmology_CPAC.pdf. Accessed on: 21 November 2012.

(21) Hodge W, Horsley T, Albiani D, Baryla J, Belliveau M, Buhrmann R, et al. The consequences of waiting for cataract surgery: a systematic review. *CMAJ.* 2007; 176(9): pp.1285-90.

(22) Healthcare Improvement Scotland. *What is the impact of using thresholds (both for referral and surgery) for first-eye cataract surgery on the delivery of the cataract service and the resources associated with it?* [Online]. Available from: http://www.healthcareimprovementscotland.org/our_work/clinical__cost_effectiveness/shtg_scoping_reports/technologies_scoping_report_9.aspx. Accessed on: 4 December 2012.

(23) Conner-Spady BL, Sanmugasunderam S, Courtright P, Mildon D, McGurran JJ, Noseworthy TW. The prioritization of patients on waiting lists for cataract surgery: validation of the Western Canada waiting list project cataract priority criteria tool. *Ophthalmic Epidemiol.* 2005; 12(2): pp.81-90.

(24) Churchill AJ, Vize CJ, Stewart OG, Backhouse O. What factors influence cataract waiting list time? *Br J Ophthalmol.* 2000; 84(4): pp.429-31.

(25) Tobacman JK, Zimmerman B, Lee P, Hilborne L, Kolder H, Brook RH. Visual acuity following cataract surgeries in relation to preoperative appropriateness ratings. *Med Decis Making.* 2003; 23(2): pp.122-30.

(26) Naeim A, Keeler EB, Gutierrez PR, Wilson MR, Reuben D, Mangione CM. Is cataract surgery cost-effective among older patients with a low predicted probability for improvement in reported visual functioning? *Med Care.* 2006; 44(11): pp.982-9.

(27) Coronini-Cronberg S, Lee H, Darzi A, Smith P. Evaluation of clinical threshold policies for cataract surgery among English commissioners. *J Health Serv Res Policy.* 2012; 17(4): pp.241-7.

(28) Bedfordshire and Hertfordshire Priorities Forum. *Clinical threshold for elective cataract surgery*. UK: NHS; Report No.: 31. 2011.

(29) NHS Suffolk Public Health Team. *Low Priority Procedure - Policy T11 Cataract Surgery*. UK: NHS; 2011.

(30) NHS Black Country Cluster. *Procedures of Limited Clinical Priority Guideline & Commissioning Policy* [Online]. Available from: http://www.dudleyccg.nhs.uk/wp-content/uploads/2012/07/Black-Country-Cluster-Procedures-of-Limited-Clinical-Priority-Guideline-and-Commissioning-Policy.pdf. Accessed on: 17 December 2012.

(31) North Yorkshire and York PCTs. *Clinical Pathways and Referral Guide*. UK: National Health Service; 2010.

(32) NHS Nottinghamshire County & NHS Nottingham City. *Commissioning Policy covering procedures of limited clinical value*. UK: NHS; 2011.

(33) NHS South West London. *2012/13 South West London Effective Commissioning Initiative*. London, UK: NHS; 2012.

(34) Irish College of Ophthalmologists. *Visual Standards for Driving Safety* [Online]. Available from: http://www.eyedoctors.ie/visual-standards-for-driving/ICO_recommendations_Visual_Standards.pdf. Accessed on: 16 January 2013.

(35) Road Safety Authority. *Medical Fitness to Drive Guidelines (Group 1 drivers)*. Ireland: Road Safety Authority; 2013.

(36) Western Canada Waiting List Investigators. *Cataract surgery priority criteria tool* [Online]. Available from: http://www.wcwl.ca/media/pdf/library/prioritization_tools.5.pdf. Accessed on: 17 January 2013.

(37) Quintana JM, Espallargues M, Las HC, Allepuz A, Vrotsou K, Moharra M, et al. Comparison of 3 systems for assigning priority to patients on waiting lists for cataract extraction. *Can J Ophthalmol.* 2010; 45(2): pp.125-31.

(38) Lansingh VC, Carter MJ, Martens M. Global cost-effectiveness of cataract surgery. *Ophthalmology.* 2007; 114(9): pp.1670-8.

(39) NTPF. *National Treatment Purchase Fund Annual Reports 2005-2011*. Ireland: NTPF; 2011.

(40) National Casemix Programme. *Ready Reckoner of Acute Hospital inpatient and daycase activity and costs (summarised by DRG) relating to 2010 costs and activity*. 2012.

(41) Council of Europe. *Health Policy: Report on Criteria for the management of waiting lists and waiting times in health care*. Strasbourg: Council of Europe; 2012.

Appendix 1 – Procedure codes for cataract surgery

HIPE block code	Procedure code	Description
195	42698-00	Intracapsular extraction of crystalline lens
	42702-00	Intracapsular extraction of crystalline lens with insertion of foldable artificial lens
	42702-01	Intracapsular extraction of crystalline lens with insertion of other artificial lens
196	42698-01	Extracapsular extraction of crystalline lens by simple aspiration (and irrigation) technique
	42702-02	Extracapsular extraction of crystalline lens by simple aspiration (and irrigation) technique with insertion of foldable artificial lens
	42702-03	Extracapsular extraction of crystalline lens by simple aspiration (and irrigation) technique with insertion of other artificial lens
197	42698-02	Extracapsular extraction of crystalline lens by phacoemulsification and aspiration of cataract
	42702-04	Extracapsular extraction of crystalline lens by phacoemulsification and aspiration of cataract with insertion of foldable artificial lens
	42702-05	Extracapsular extraction of crystalline lens by phacoemulsification and aspiration of cataract with insertion of other artificial lens
198	42698-03	Extracapsular extraction of crystalline lens by mechanical phacofragmentation and aspiration of cataract
	42702-06	Extracapsular extraction of crystalline lens by mechanical phacofragmentation and aspiration of cataract with insertion of foldable artificial lens
	42702-07	Extracapsular extraction of crystalline lens by mechanical phacofragmentation and aspiration of cataract with insertion of other artificial lens
199	42698-04	Other extracapsular extraction of crystalline lens
	42702-08	Other extracapsular extraction of crystalline lens with insertion of foldable artificial lens
	42702-09	Other extracapsular extraction of crystalline lens with insertion of other artificial lens
200	42731-01	Extraction of crystalline lens by posterior chamber sclerotomy with removal of vitreous
	42698-05	Other extraction of crystalline lens
	42702-10	Other extraction of crystalline lens with insertion of foldable artificial lens
	42702-11	Other extraction of crystalline lens with insertion of other artificial lens
201	42737-00	Needling of posterior capsule of lens
	42734-00	Capsulotomy of lens
	42788-00	Capsulotomy of lens by laser
	42791-02	Corticolysis of lens material by laser
	42719-00	Capsulectomy of lens
	42722-00	Capsulectomy of lens by posterior chamber sclerotomy
	42731-00	Capsulectomy of lens by posterior chamber sclerotomy with removal of vitreous
	42719-02	Mechanical fragmentation of secondary membrane
202	42716-00	Removal of juvenile cataract

Appendix 2 – International clinical referral thresholds

Guideline	Scope	Threshold	Evidence
New Zealand-National Referral Guidelines[20]		*Urgent Referral (within four weeks)* for lens induced glaucoma *Semi-urgent (within 12 weeks)* for cataract extraction required in order to treat posterior segment disease e.g. diabetic retinopathy All other cataracts are scored using the scoring system below and prioritised as follows: ▪ *Routine (within six months)* for patients who score between 21-50 *Deferrable* – for patients who score between 0-20	-

Section 1: VISUAL ACUITY SCORE

FELLOW EYE

VA	6/9	6/12	6/18	6/24	6/36	6/60	CF/HM
6/9	2	4	6	7	8	9	10
6/12	4	8	10	11	12	13	14
6/18	6	10	14	15	16	17	19
6/24	7	11	15	21	22	23	25
6/36	8	12	16	22	26	28	30
6/60	9	13	17	23	28	32	34
CF/HM	10	14	19	25	30	34	35

N5	0
N6	1
N8	2
N10	3
N12	5

Distance Vision Score (Max 35 Points)

Max 5 points

Section 2: CLINICAL MODIFIERS

- If BCVA better than 6/24 in eye to be operated on, add 5 points only if posterior sub-capsular cataract present - to offset good VA
- If non-cataract pathology reducing vision, subtract up to 50% of VA points
  (Posterior segment disease requiring prompt treatment to be ranked by disease to be treated)

Max 5 points

Section 3: SEVERITY OF VISUAL IMPAIRMENT

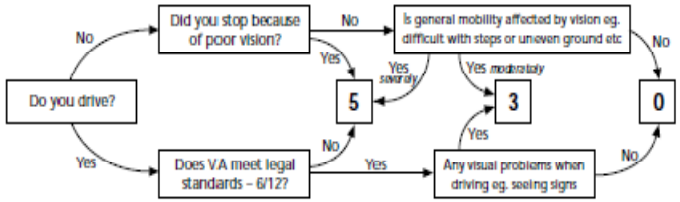
A. Gross visual function: Any difficulty, even with glasses, recognising faces, watching TV, cooking, playing sport/cards etc.

POINTS: 0 - - - - 1 - - - - 2 - - - - 3 - - - - 4 - - - - 5

No difficulty — Difficult — Impossible

Max 5 points

B. Driving/Mobility: Choose one pathway



Max 5 points

Section 4: ABILITY TO WORK, GIVE CARE, LIVE INDEPENDENTLY

POINTS: 0 - - - - 1 - - - - 2 - - - - 3 - - - - 4 - - - - 5

No difficulty — Difficult — Impossible

Max 5 points

Section 5: OTHER DISABILITY

POINTS: 0 - - - - 1 - - - - 2 - - - - 3 - - - - 4 - - - - 5

No disability — Moderate disability — Severe disability

State disability: _____

Max 5 points

Sections 4 & 5 only apply when sections 1 + 2 + 3 < 50 (Maximum points allowed)

The maximum score is 50 points — **TOTAL SCORE**

OUTCOME: To GP ☐ Waiting List ☐ Booked ☐

British Columbia Medical Association, Guidelines and Protocols[6]	Adults (age 19 and older)	The presence of a cataract does not itself indicate a need for surgery. Cataract surgery may be indicated when the cataract reduces visual function to a level that interferes with everyday activities of the patient and the patient desires surgical intervention to improve vision. The following specific indications for cataract surgery are suggested: *a) Visual disability and Snellen Acuity of 20/50 or worse* The visual impairment produced by the cataract is responsible for the patient's disability in carrying out needed or desired activities (driving, reading, occupational needs) and the best correctable visual acuity in the affected eye is 20/50 or worse. *b) Visual disability and Snellen Acuity of 20/40 or better* The visual impairment produced by the cataract is responsible for the patient's disability in carrying out needed or desired activities (driving, reading, occupational needs), as documented by any of the following reasons: ▪ visual disability increases due to glare or dim illumination ▪ patient complains of monocular diplopia or polyopia ▪ visual disparity exists between the two eyes ▪ and the best correctable visual acuity in the affected eye is 20/40 or better. *c) Other indications for cataract removal* ▪ Lens-induced disease: phacomorphic glaucoma, phacolytic glaucoma, and other lens-induced disease may require cataract surgery and the need for extraction may be urgent. ▪ Concomitant ocular disease that requires clear media: cataract extraction may be required to adequately diagnose other ocular conditions such as diabetic retinopathy. *d) Visual ability in patients legally blind in one eye* The indications for surgery in patients with cataract in one eye who are legally blind in the other eye are the same as for other patients, except that the risk of total blindness must be considered and emphasized. **Contra-indications for Surgery** Surgery should not be performed solely to improve vision if: a) the patient does not desire surgery b) glasses or other visual aids provide functional vision satisfactory to the patient c) the patient's quality of life is not compromised d) the patient is medically unfit e) the patient has concomitant disease where functional improvement is unlikely.	The Cataract Guideline Working Group reviewed material published since the release of the 1996 B.C. guideline, as well as the original literature. The Working Group found that while some new material has added to the general knowledge base and to the body of evidence regarding indications for and outcomes of cataract surgery, there are still relatively few published papers concerning evidence for the procedure and its outcomes.

American Optometric Association- Quick Reference Guide[5]		Treatment of the patient with cataract depends on the extent of the patient's visual disability. Surgery is indicated when the cataract formation has reduced visual acuity to the level that it interferes with the patient's lifestyle and everyday activities and when satisfactory functional vision cannot be obtained with spectacles, contact lenses, or other optical aids. **Indications for Surgery:** ▪ Patient complaints of decreased vision, monocular diplopia, or large refractive differences between the eyes. ▪ Snellen visual acuity worse than 20/40. ▪ Lens-induced disease (e.g., uveitis, phacomorphic or phacolytic glaucoma). ▪ Need to obtain a clear view of the retina in concomitant ocular disease (e.g., diabetic retinopathy).	
Canadian Ophthalmological Society evidence-based clinical practice guidelines for cataract surgery in the adult eye[7]		▪ Cataract surgery is indicated primarily for the correction of visual impairment that cannot be adequately improved non-surgically and that is directly attributable to the presence of a lens opacity. ▪ Even in the absence of functional symptoms, cataract surgery is indicated to meet visual acuity standards when a patient's visual acuity falls below legal standards for activities (such as driving, military service, or flying) and the patient wishes to continue to perform these activities. ▪ Cataract surgery is indicated for medical reasons, such as phacomorphic glaucoma, lens-induced uveitis, or treatable posterior segment pathology that cannot be adequately managed due to lens opacity.	Quintana J, Escobar A, Arostegui I. Development of appropriateness explicit criteria for cataract extraction by phacoemulsification. BMC Health Serv Res 2006;6:23.
Guideline for Surgical and Non-Surgical Management of Cataract in the Otherwise Healthy Adult Eye, Toward Optimized Practice (Alberta, Canada)[8]	Guidelines do not apply to: Individuals under the age of 18 years, Individuals with other eye diseases	**Indications for Surgery** Cataract surgery is justified and appropriate when subjective, objective, and educational criteria are met. **Subjective** The subjective criterion is when the ability to carry out needed or desired activities is impaired. 1. The patient's own assessment of his/her visual disability (impact on driving, viewing TV, and special occupational or vocational needs) and, in particular, disability at near distances (e.g., reading, occupational activities requiring near vision). As a general rule, the better the Snellen acuity, the greater the need for verification and documentation of functional disability. When visual acuity is marginally reduced, the risk relative to the potential benefit of surgery becomes	

		even more significant. The practitioner should provide documentation of the decreased vision which may include any of the following: ▪ Visual disability fluctuates as a result of environmental factors, (e.g., effects of glare, lights of oncoming cars or dim illumination). ▪ The ability to carry out needed or desired activities is impaired. ▪ The patient complains of monocular diplopia or polyopia. ▪ Visual disparity exists between the two eyes. ▪ The patient is unable to carry out normal occupational activities or hold a driver's license. 2. The patient's perception of the impact of their disability on life-style. 3. The patient's complaints of disabling glare. Occasionally patients with cataracts present with the complaint of disabling glare. These patients will often see more poorly in daylight conditions, so that their visual complaints will be inconsistent with the visual acuity measured in a darkened room. When this appears to be the case, the assessment of visual function under conditions of ambient sunlight will often reveal the existence of this functional complaint and the reasons for it. The differences between measured acuity in a darkened room (and high contrast chart) and that of ambient light (e.g., pen light) producing glare and reduction of functional acuity needs to be documented. When such a verifiable, reproducible loss of vision can be documented mimicking the patient's complaints, the patient can be considered for cataract surgery. **Objective** The objective criterion is based on the level of visual acuity in the affected eye. There are two other indications for cataract removal: 1. Lens -induced diseases. 2. The need to visualize the fundus. Surgery should ***not*** be performed under the following circumstances: ▪ The patient does not desire surgery. ▪ Glasses or visual aids provide satisfactory functional vision. ▪ Surgery will not improve visual function. ▪ The patient's life-style is not compromised. ▪ The patient is medically unfit. ▪ The patient has had a cataract removed in one eye which has not sufficiently	

		healed to warrant the surgical removal of cataract in the second eye.	
American Academy of Ophthalmology, Preferred Practice Pattern, Cataract in the Adult Eye[2]	Adults (18 years old and older) with cataracts.	The decision to recommend cataract surgery should be based on consideration of the following factors: visual acuity, visual impairment, and potential for functional benefits. The primary indication for surgery is visual function that no longer meets the patient's needs and for which cataract surgery provides a reasonable likelihood of improved vision. Other indications for a cataract removal include the following: ▪ Clinically significant anisometropia in the presence of a cataract. ▪ The lens opacity interferes with optimal diagnosis or management of posterior segment conditions. ▪ The lens causes inflammation or secondary glaucoma (phacolysis, phacoanaphylaxis). ▪ The lens induces angle closure (phacomorphic). Surgery for a visually impairing cataract should not be performed under the following circumstances: ▪ Tolerable refractive correction provides vision that meets the patient's needs and desires. ▪ Surgery is not expected to improve visual function, and no other indication for lens removal exists. ▪ The patient cannot safely undergo surgery because of coexisting medical or ocular conditions. ▪ Appropriate postoperative care cannot be arranged. ▪ The patient or patient's surrogate decision maker is unable to give informed consent for non emergency surgery.	
Cataract Surgery Guidelines, The Royal College of Ophthalmologists, UK[4]		Referral criteria for cataract surgery: ▪ the patient should have sufficient cataract to account for the visual symptoms ▪ the cataract should affect the patient's lifestyle. Other indications for cataract surgery include facilitating treatment and / or monitoring posterior segment disease e.g. diabetic retinopathy, correcting anisometropia or treating lens induced ocular disease.	

UK Primary Care Trusts (PCTs): examples of clinical referral and treatment thresholds linked to funding of procedures			
Bedfordshire and Hertfordshire[28]	This policy does not extend to cataract removal incidental to the management of other eye conditions.	Referral of patients with cataracts to ophthalmologists should be based on the following indications: 1. The patient has sufficient cataract to account for the visual symptoms. AND 2. The patient has best corrected visual acuity of 6/12 or worse in the worst eye and the reduced visual acuity is impairing their lifestyle: a. the patient is at significant risk of falls b. the patient's vision is affecting their ability to drive c. the patient's vision is substantially affecting their ability to work d. the patient's vision is substantially affecting their ability to undertake leisure activities such as reading, watching television or recognising faces. OR 3. The patient has best corrected visual acuity of better than 6/12 in the worst eye but they are working in an occupation in which good visual acuity is essential to their ability to continue to work e.g. watchmaker, micro-surgeon. OR 4. The patient has bilateral cataracts, neither of which fulfils the threshold for surgery, but which together reduce binocular vision below the DVLA standard for driving. OR 5. The patient has best corrected visual acuity of better than 6/12 in the worst eye but they are experiencing some other significant impact on their quality of life, as a result of their visual symptoms. AND 6. The patient is willing to have cataract surgery: a. The referring optometrist or GP has discussed the risks and benefits using an approved information leaflet (national or locally agreed) and ensured the patient understands and is willing to undergo surgery before referring. Second eye surgery in patients with bilateral cataracts will be funded if the criteria above are met again. This should be assessed not earlier than the post-operative review following surgery on the first eye. Cataract surgery criteria and threshold Best corrected visual acuity is - 6/12 Patients score >25 (out of 48) on the visual disability score (draft form below)	Department of Health 2007. Commissioning toolkit for community based eye care services. NHS Executive 2000. Action on cataracts. Good practice guidance. Royal College of Ophthalmologists 2010. Cataract surgery guidelines. P Jaycock, R L Johnston, H Taylor, M Adams, D M Tole, P Galloway, C Canning, J M Sparrow and the UK EPR user group (2009). The Cataract National Dataset electronic multi-centre audit of 55 567 operations: updating benchmark standards of care in the United Kingdom and internationally. Eye 23: 38-49

<table>
<tr>
<td></td>
<td></td>
<td>
Visual Disability Score
<table>
<tr><th>Activity</th><th>Not at all</th><th>A little bit</th><th>Some</th><th>Quite a lot</th><th>Totally</th><th>Disabled Score</th></tr>
<tr><td colspan="7">How much does your vision hinder, limit or disable you in each of the following activities? (Please score as 1 if you/they don't do the activity)</td></tr>
<tr><td>Your usual daily activities</td><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td></td></tr>
<tr><td>Recognising people or objects across the street</td><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td></td></tr>
<tr><td>Reading price labels in shops & supermarkets</td><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td></td></tr>
<tr><td>Reading a magazine, newspaper or book</td><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td></td></tr>
<tr><td>Watching Television</td><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td></td></tr>
<tr><td>Knitting/Sewing</td><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td></td></tr>
<tr><td>Daytime Driving</td><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td></td></tr>
<tr><td>Night-time Driving</td><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td></td></tr>
<tr><td colspan="7">How much is your vision hindered, limited or disabled by glare (dazzling light) in each of the following activities? (Please score as 1 if you/they don't do the activity)</td></tr>
<tr><td>Your usual daily activities</td><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td></td></tr>
<tr><td>Walking outside on a sunny day</td><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td></td></tr>
<tr><td>Driving towards the sun or oncoming headlights</td><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td></td></tr>
<tr><td>Reading shiny paper (such as a magazine)</td><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td></td></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
</table>
</td>
<td></td>
</tr>
<tr>
<td>NHS Suffolk[29]</td>
<td></td>
<td>The patient should have sufficient cataract in the eye you are proposing to refer cataract surgery on, to account for the visual symptoms as evidenced in the Cataract Referral Form:

▪ Blurred or dim vision with a corrected binocular distance acuity of 6/10* (0.20 logMAR) or worse, or
▪ Blurred or dim vision with a monocular distance acuity of 6/18 (0.40 logMAR) or worse.
▪ The cataract should affect the patient's lifestyle scoring ≥3 as evidenced in the</td>
<td>Department of Health. National Eye Care Plan (2004)

The Royal Collage of Ophthalmologists: Cataract Surgery guidelines (2004)</td>
</tr>
</table>

		Cataract Assessment Form. ▪ The patient has waited 7 days to make a decision and wishes to undergo cataract surgery and understands the risks and benefits of this surgery. ***For second eye surgery*** If vision in the first operated eye is better than 6/10 (0.20 logMAR) corrected postoperatively then the patient will need to have sufficient cataract to cause blurred or dim vision with a monocular distance acuity of 6/18 (0.40 logMAR) or worse in the second eye to qualify for cataract surgery. If vision in the first eye does not correct to better than 6/10 then second eye cataract surgery can be offered only if the binocular corrected vision is 6/10 or worse or the second eye vision is monocularly worse than 6/18 corrected. ***Exceptions*** The only exceptions to the above referral criteria are as follows: ▪ Anisometropia (a large refractive difference between the two eyes, on average about 3 dioptres), which would result in poor binocular vision or disabling diplopia which may increase the risk of falls. ▪ Angle closure glaucoma including creeping angle closure and phacomorphic glaucoma. ▪ Diabetic and other retinopathies including retinal vein occlusion and age related macular degeneration where the cataract is becoming dense enough to potentially hinder management. ▪ Oculoplastics disorders where fellow eye requires closure as part of eye lid reconstruction or where further surgery on the ipsilateral eye will increase the risks of cataract surgery. ▪ Corneal disease where early cataract removal would reduce the chance of losing cornea clarity (e.g. Fuch's corneal dystrophy or after keratoplasty). ▪ Corneal or conjunctival disease where delays might increase the risk of complications (e.g. cicatrising conjunctivitides). ▪ Other glaucoma's, inflammatory eye disease or medical retina disease where allowing a cataract to develop would hamper clinical decision making or investigations such as OCT, visual fields or fundus fluorescein angiography. ▪ Neuro-ophthalmological conditions where cataract hampers monitoring of disease (e.g. visual field changes) *6/10 equates to 6/9-2 on Snellen chart	NHS Executive. Action on Cataracts; Good Practice Guidance (2000) Evans JR, Fletcher AE, Wormald RP, Ng ES. Stirling S. Prevalence of visual impairment in people aged 75 years and older in Britain: Results from the MRC trial of assessment and management of older people in the community. Br J Ophthalmol 2002; 86: 795-800

		Appendix 1 Cataract Assessment Form Patients need to evidence how cataract is affecting daily activity. A patient needs to score ≥3. **1. Visual disability** Affected by glare □ 2 Difficulty with reading □ 1 Difficulty watching television □ 1 Difficulty performing work or hobbies □ 1 **2. Social functioning (Tick ONE box only)** Lives independently □ 2 Cares for partner □ 2 Lives in sheltered accommodation □ 1 Lives with carer □ 1 Lives in a residential or nursing home □ 1 **3. Other** Drives a car/is in paid employment □ 1 Mild/moderate hearing impairment □ 1 Severe hearing impairment (Deaf) □ 2 Has fallen twice or more in the last 12 months □ 2	
Dudley, Sandwell, Walsall and Wolverhampton City PCTs[30]		Unless one or more of the following criteria are met, a best corrected visual acuity of better than 6/12 in the affected eye will not normally be funded. Since the level of visual acuity that an individual requires to function without altering their lifestyle varies, measurements of visual acuity do not necessarily reflect the degree of visual disability patients may experience as a result of cataracts. The criteria set out below attempt to explicitly take that into account. The legal visual requirement for driving falls somewhere between 6/9 and 6/12 (strictly speaking it is based on the number plate test) and it is anticipated that the thresholds set	Busbee et al (2002) Incremental cost-effectiveness of initial cataract surgery. Ophthalmology 109 (3): 606-612 B. Busbee Cost-utility analysis of cataract surgery in the second

		out below will not render the majority of people unable to drive. This policy also recognises the increasing body of evidence that second eye surgery does benefit patients. This applies to both first and second eyes, with a best corrected visual acuity of 6/12 or worse in the affected eye used as the threshold for cataract surgery. Unless one or more of the following criteria are met, a best corrected visual acuity of better than 6/12 in the affected eye will not normally be funded: 1. Patients who are still working in an occupation in which good acuity is essential to their ability to continue to work (e.g. watchmaker). 2. Patients with posterior subcapsular cataracts and those with cortical cataracts who experience problems with glare and a reduction in acuity in daylight or bright conditions. 3. Patients who need to drive at night who experience significant glare due to cataracts which affects driving. 4. Difficulty with reading due to lens opacities. 5. Patients with visual field defects borderline for driving, in whom cataract extraction would be expected to significantly improve the visual field. 6. Significant optical imbalance (anisometropia or anisekonia) following cataract surgery on the first eye. 7. Patients with glaucoma who require cataract surgery to control intra ocular pressure. 8. Patient with diabetes who require clear views of their retina to look for retinopathy. 9. Patients with wet macular degeneration or other retinal conditions who require clear views of their retina to monitor their disease or treatment (e.g. treatment with anti-VEGFs).	eye. Ophthalmology, 110; (12): 2310-2317 Tobacman et al (1996) Assessment of appropriateness of cataract surgery at ten academic medical centers in 1990. Ophthalmology. 103(2):207-15. Choi et al (2004) Appropriateness ratings in cataract surgery. Yonsei Med J 45:396-405 Mangione et al (1995) Prediction of visual function after cataract surgery. A prospectively validated model. Arch Opthal. 113:1305-1311. Brogan et al. Can the use of visual disability questionnaires in primary care help reduce inequalities in cataract surgery rates?–a long term cohort study. In press

North Yorkshire and York PCTs[31]		Patients should be referred where best corrected visual acuity as assessed by high contrast testing (Snellen) is: ▪ Binocular visual acuity of 6/9 or worse OR: ▪ Reduced to 6/18 or worse irrespective of the acuity of the other eye OR: ▪ The patient wishes to/is required to drive and does not meet Driving and Licensing Authority (DVLA) eyesight requirements ▪ Any suspicion of cataracts in children (e.g. altered or absence of red reflex at neonatal or 6 week check) should be referred urgently.	At a glance guide to the current medical standards of fitness to drive (August 2006) Royal College of Ophthalmologists cataract surgery guidelines (2004) Royal College of Ophthalmologists visual standards for driving (1999)
Nottinghamshire County and Nottingham City PCTs[32]		The PCT will fund Cataract Surgery where there is a visual acuity of 6/12 (corrected) in the worst eye, or for: 1. Patients for whom it is vital to have good visual acuity in the worse eye for the purpose of fulfilling essential occupational responsibilities (e.g. watchmaker). 2. Patients with posterior subcapsular cataracts and those with cortical cataracts who experience problems with glare and a reduction in acuity in bright conditions. 3. Driving: the legal requirement for driving falls between 6/9 and 6/12 (strictly speaking it is based on the number plate test). It is anticipated that the threshold will not render the majority of people unable to drive as it applies to the worst eye only. Exceptions to this include: * Patients who need to drive who experience significant glare which affects driving; * Patients for whom it is vital to drive at night for the purpose of fulfilling essential domestic, carer or occupational responsibilities, and who experience glare that is related to cataract; * Patients with visual field defects borderline for driving, in whom cataract extraction would be expected to significantly improve the visual field.	Department of Health. Commissioning Toolkit for Community Based Eye Care Services (DH 2007) NHS Executive. Action on Cataracts: Good practice guidance (Jan 2003)

		4. Patients with glaucoma who require cataract surgery to control intra ocular pressure. 5. Patient with diabetes who require clear views of their retina to look for retinopathy. **Cataract Second Eye** 1. Where the cataract procedure on the first eye has achieved a VA of 6/9 or better, and the VA for the second eye is 6/24 or better, then the patient should be discharged, unless receiving treatment for any other eye condition. The patient should be advised to attend an optometrist for an annual sight test or earlier if they notice any deterioration of vision. 2. If the first eye does not achieve a VA of 6/9 or better, then the second eye should be dealt with on clinical merit, taking into account any directly related essential responsibilities (i.e. the requirement for night driving). 3. There are circumstances, where despite good acuities, there may still be a clinical need to operate on the second eye fairly speedily e.g. where there is resultant anisometropia (a large refractive difference between the two eyes) which would result in poor binocular vision or even diplopia.	
South West London PCTs[33]		The PCT will only fund elective cataract surgery where the following apply: The best corrected visual acuity is 6/9 or worse in either the first or second eye. AND The patient has impairment in lifestyle such as substantial effect on activities of daily living, leisure activities, and risk of falls. OR Surgery is indicated for management of ocular co-morbidities such as control of glaucoma, view of diabetic retinopathy etc. OR Patients with cataract having visual acuity better than 6/9 where there is a clear clinical indication or symptoms affecting lifestyle. For example, the patient with a visual acuity of 6/6 and symptomatic posterior subcapsular cataract, affecting activities of daily living and driving.	Busbee BG, Brown MM, Brown GC, Sharma S. Incremental cost-effectiveness of initial cataract surgery. Ophthalmology 109 (3): 606-612 March 2002 Weale et al. Cost Benefit Analysis of Cataract Surgery – English Longitudinal Survey of Ageing. National Institute of Economic and Social Research Discussion Paper 349 – November 2009.

Published by the Health Information and Quality Authority.

For further information please contact:

Health Information and Quality Authority
Dublin Regional Office
George's Court
George's Lane
Smithfield
Dublin 7

Phone: +353 (0) 1 814 7400
URL: www.hiqa.ie