NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE

Guideline scope

Glaucoma: diagnosis and management

Topic

NICE intends to partially update the guideline on the diagnosis and management of chronic open angle glaucoma (CG85). This will include case finding and referral from primary to secondary care. Other areas for update are set out in the surveillance review decision.

Some areas of the guideline are not being updated and we cannot accept comments on them at the scoping stage – for details see key areas that will be covered and areas that will not be covered.

The guideline is for use in the NHS in England.

The guideline will be developed using the methods and processes outlined in Developing NICE guidelines: the manual.

For more information about why this guideline is being developed, and how the guideline will fit into current practice, see the context section.

Who the guideline is for

- People using services, families and carers and the public.
- Optometrists.
- Ophthalmologists.
- Pharmacists.
- Nurses.
- GPs.

It may also be relevant for:

- Commissioners of services.

NICE guidelines cover health and care in England. Decisions on how they apply in other UK countries are made by ministers in the Welsh Government, Scottish Government, and Northern Ireland Executive.

Equality considerations

NICE has carried out an equality impact assessment [add hyperlink in final version] during scoping. The assessment:

- lists equality issues identified, and how they have been addressed
- explains why any groups are excluded from the scope.

The guideline will look at inequalities relating to age, family origin, socioeconomic status, and moving from place to place (for example, people who are homeless and Gypsies and Travellers).

1 What the guideline is about

1.1 Who is the focus?

Groups that will be covered:

- Adults (18 and over) with confirmed chronic open angle glaucoma.
- Adults (18 and over) with suspected chronic open angle glaucoma.
- Adults (18 and over) with ocular hypertension.
- Adults (18 and over) with chronic open angle glaucoma or ocular hypertension associated with pseudoexfoliation or pigment dispersion.
- Populations with a higher prevalence of chronic open angle glaucoma and groups who may have worse clinical outcomes, including:
  - adults with a family history of chronic open angle glaucoma
  - older people (over 70 years)
  - adults of black African or black Caribbean family origin
  - adults living in areas of socioeconomic deprivation
  - younger adults with chronic open angle glaucoma or ocular hypertension (under 50 years).

Groups that will not be covered

We cannot accept comments on these excluded groups

- Children and young people under 18 years.
- People with secondary glaucoma, for example, neovascular or uveitic glaucoma. (Chronic open angle glaucoma or ocular hypertension variants associated with pseudoexfoliation or pigment dispersion are not excluded.)
- People with, or at risk of, primary or secondary angle closure glaucoma.
- People with primary congenital, infantile or childhood glaucoma.
- People with angle closure.

1.2 Settings

Settings that will be covered

- All settings in which NHS-funded healthcare is received.

1.3 Activities, services or aspects of care

We will look at evidence on the areas listed below when developing the guideline, but it may not be possible to make recommendations on all the areas. The decisions relating to which areas from the published guideline will be updated by this update and which areas will not be updated have been fully explained in the surveillance review decision. Areas from the published guideline which will not be updated as part of this update may be considered by future updates.

Key areas that will be covered

Areas from the published guideline that will be updated

We cannot accept comments on key areas 1–3 in this section but we will accept comments on key area 4 in this section and, all key questions in (section 1.5).

1 The diagnostic accuracy of tests[1] used for the provisional and definitive identification of chronic open angle glaucoma, suspected chronic open angle glaucoma and ocular hypertension in people presenting to community optometrists and those referred to hospital eye services. Tests will involve 1 or more of the following:

- measuring intraocular pressure
- assessing the optic nerve head
- assessing the anterior chamber angle
- measuring the central corneal thickness.

2 The use of pharmacological interventions for people with chronic open angle glaucoma, suspected chronic open angle glaucoma or ocular hypertension (for example, when treatment should be started and how long it should be continued). Treatments considered will include:

- eye drops, including
  - prostaglandin analogues
  - carbonic anhydrase inhibitors
  - beta-blockers
  - sympathomimetics
  - miotics
  - preservative-free solutions
  - fixed-combination solutions
- systemic carbonic anhydrase inhibitors.

3 Frequency of monitoring for people with confirmed chronic open angle glaucoma, suspected chronic open angle glaucoma or ocular hypertension.

[1] Visual field assessments are an integral part of diagnostic assessment. This update is not reviewing visual field assessments because there is no new evidence (as identified by the surveillance review decision). Recommendations from CG85 on visual field assessment will be carried forward as part of this update.

4 The most appropriate service models, where evidence of clinical and cost effectiveness is available (only in relation to the service models to support repeat measures, enhanced case finding and referral refinement).

Note that guideline recommendations will normally fall within licensed indications; exceptionally, and only if clearly supported by evidence, use outside a licensed indication may be recommended. The guideline will assume that prescribers will use a medicine's summary of product characteristics to inform decisions made with individual patients

Areas not in the published guideline that will be included in the update

We can accept comments on these areas.

1 Repeat measures, enhanced case finding and referral refinement.
2 Thresholds for referral to secondary care.

Areas that will not be covered

We cannot accept comments on this area.

1 Population-based screening programmes for glaucoma.

Areas from the published guideline that will not be updated

We cannot accept comments on these areas

1 The accuracy of visual field assessments[2] for the provisional and definitive identification of chronic open angle glaucoma and ocular hypertension in people presenting to community optometrists and those referred to hospital eye services.

[2] Visual field assessments are an integral part of diagnostic assessment. This update is not reviewing visual field assessments because there is no new evidence (as identified by the surveillance review decision). Recommendations from CG85 on visual field assessment will be carried forward as part of this update.

2 The effectiveness of procedures (penetrating and non-penetrating) for surgical drainage with and without pharmacological augmentation or drainage devices.

3 The effectiveness of drain manipulation after surgery with and without pharmacological augmentation.

4 The effectiveness of laser procedures to facilitate aqueous outflow or reduce aqueous production.

5 The information, education and support needed to achieve adherence to treatment.

Recommendations in areas that are not being updated may be edited to ensure that they meet current editorial standards, and reflect the current policy and practice context.

1.4 Economic aspects

We will take economic aspects into account when making recommendations. We will develop an economic plan that states for each review question (or key area in the scope) whether economic considerations are relevant, and if so whether this is an area that should be prioritised for economic modelling and analysis. We will review the economic evidence and carry out economic analyses, using an NHS and personal social services (PSS) perspective.

1.5 Key issues and questions

While writing this scope, we have identified the following key issues, and key questions based on the surveillance review decision:

1 Tests for diagnosis and monitoring

1.1 What is the diagnostic accuracy of tests for diagnosis and monitoring in people with ocular hypertension or suspected chronic open angle glaucoma, including tests for:

- measuring intraocular pressure
- assessing the optic nerve head
- assessing the anterior chamber angle
- measuring central corneal thickness.

1.2 What is the diagnostic accuracy of tests for diagnosis and monitoring in people with chronic open angle glaucoma, including tests for:

- measuring intraocular pressure
- assessing the optic nerve head
- assessing the anterior chamber angle
- measuring the central corneal thickness.

2 Prognosis and monitoring intervals

2.1 What is the accuracy of risk tools for identifying people who are at increased risk of developing chronic open angle glaucoma?

2.2 What is the accuracy of risk tools for identifying people with chronic open angle glaucoma who are at increased risk of vision loss?

2.3 What are the optimum intervals for monitoring in people with chronic open angle glaucoma, people with suspected chronic open angle glaucoma and people with ocular hypertension?

3 Treatment

3.1 Is treatment of ocular hypertension (in people who may also have suspected chronic open angle glaucoma) overall clinically and cost effective? If so, which pharmacological treatment is the most clinically and cost effective and the least harmful, out of the following:

- eye drops
  - prostaglandin analogues
  - carbonic anhydrase inhibitors
  - beta-blockers
  - sympathomimetics
  - miotics
  - preservative-free solutions
  - fixed-combination solutions.
- systemic carbonic anhydrase inhibitors.

3.2 Which are the most clinically and cost effective and least harmful pharmacological treatments for lowering intraocular pressure and

preserving visual field in people with chronic open angle glaucoma, out of the following:

- eye drops
  - prostaglandin analogues
  - carbonic anhydrase inhibitors
  - beta-blockers
  - sympathomimetics
  - miotics
  - preservative-free solutions
  - fixed-combination solutions.
- systemic carbonic anhydrase inhibitors.

4 Repeat measures, enhanced case finding and referral refinement

4.1 What are the most effective service models for finding people with chronic open angle glaucoma, suspected chronic open angle glaucoma and ocular hypertension?

4.2 Which tools should be used for repeat measures, enhanced case finding and referral refinement?

- 4.2.1 Which professionals and services should use these tools for repeat measures, enhanced case finding and referral refinement?

4.3 What are the thresholds for referral for repeat measures, enhanced case finding, referral refinement and hospital eye service evaluation?

The key questions may be used to develop more detailed review questions, which guide the systematic review of the literature.

1.6 Main outcomes

The main outcomes that will be considered when searching for and assessing the evidence are:

1 Health-related quality of life (validated scores)

2 Intraocular pressure

3 Visual field defect

4 Onset of chronic open angle glaucoma

5 Progression of chronic open angle glaucoma
6 Vision loss
7 Treatment adherence and discontinuation
8 Adverse events (for example, allergic reactions, irritation, respiratory difficulty)
9 Resource use and costs, including number of hospital visits.

2 Links with other NICE guidance, NICE quality standards, and NICE Pathways

2.1 NICE guidance

NICE guidance that will be updated by this guideline

- Glaucoma: diagnosis and management (2009) NICE guideline CG85

NICE guidance about the experience of people using NHS services

NICE has produced the following guidance on the experience of people using the NHS. This guideline will not include additional recommendations on these topics unless there are specific issues related to glaucoma:

- Patient experience in adult NHS services (2012) NICE guideline CG138
- Service user experience in adult mental health (2011) NICE guideline CG136
- Medicines adherence (2009) NICE guideline CG76

NICE guidance that is closely related to this guideline

Published

NICE has published the following guidance that is closely related to this guideline:

- Medicines adherence: involving patients in decisions about prescribed medicines and supporting adherence (2009) NICE guideline CG76
- Medicines optimisation: the safe and effective use of medicines to enable the best possible outcomes (2015) NICE guideline NG5

- Canaloplasty for primary open-angle glaucoma (2008) NICE interventional procedure guidance 260
- Trabecular stent bypass microsurgery for open angle glaucoma (2011) NICE interventional procedure guidance 396
- Trabeculotomy ab interno for open angle glaucoma (2011) NICE interventional procedure 397

2.2 NICE quality standards

NICE quality standards that may need to be revised or updated when this guideline is published

- Glaucoma in adults (2011) NICE quality standard 7

2.3 NICE Pathways

When this guideline is published, the recommendations will update the current NICE Pathway on glaucoma. NICE Pathways bring together all related NICE guidance and associated products on a topic in an interactive topic-based flow chart.

3 Context

3.1 Key facts and figures

Adult glaucoma is a group of conditions in which the head of the optic nerve (within the eye) becomes damaged, resulting in problems with sight. In many, but not all cases, glaucoma is associated with increased pressure within the eye. Left untreated, or with inadequate treatment, glaucoma may lead to blindness. Around 10% of registrations for blindness are recorded as being primarily due to glaucoma.

Chronic open angle glaucoma is the most common form of glaucoma in the UK, affecting about 2% of people over 40 years. In England and Wales, around 500,000 people have chronic open angle glaucoma. Other forms of glaucoma include closed angle and secondary glaucomas. The prevalence of glaucoma rises rapidly with age; it is more common in people of black African or Caribbean family origin, and in those with a family history of the condition.

There are often signs that something is wrong before vision is affected: increased pressure within the eye (called ocular hypertension) is found in around 3–5% of people over 40. When clinical signs are uncertain, the term 'COAG suspect' signifies a need for greater vigilance to detect any onset of chronic open angle glaucoma. The onset of visual damage from glaucoma is insidious and frequently goes unnoticed by those affected. This underlines the importance of timely identification and referral.

Most people with glaucoma are identified by community optometrists during routine sight tests. Identification of a possible problem is frequently followed by further optometric assessments in the community. Incrementally more complex assessments are undertaken by professionals with incremental knowledge, skill and experience of glaucoma. Pathways may take the form of 1 or more of repeat measures (simply rechecking initial measurements), enhanced case finding (undertaking additional tests) or referral refinement (additional testing with added 'clinical value' in the form of clinical judgements). These service configurations help to minimise false-positive referrals to hospital eye services. Appropriate configuring of services allows people at low risk (people with ocular hypertension and people with suspected chronic open angle glaucoma) to be cared for in the community. People referred to hospital eye services usually have an assessment by an ophthalmologist. CG85 recommends that for people with chronic open angle glaucoma a diagnosis and management plan should be made by a consultant ophthalmologist.

The causes of chronic open angle glaucoma remain unclear. However, once vision has been lost from glaucoma it cannot be recovered. So treatment must be directed towards preserving remaining vision to maintain, as far as possible, some sight for a person's lifetime.

The only known effective treatment for glaucoma is lowering eye pressure, even when pressure is ‘normal’ to begin with (as in normal tension glaucoma). Treatment may take the form of eye drops, laser procedures, oral medicines or drainage surgery, either singly or in combination. People who are affected need lifelong monitoring to detect possible loss of disease control and/or

disease progression. With changes in clinical status, treatments and diagnostic categories may need to be adjusted. A person with chronic open angle glaucoma can be expected to need an average of 40 follow-up visits for monitoring within their lifetime.

Most glaucoma care involves monitoring of chronic disease. This underlines the importance of appropriate monitoring intervals according to risk to maximise service efficiency. People with ocular hypertension or those with features suggesting but not diagnostic for chronic open angle glaucoma (that is, 'COAG suspects') may not need treatment but do need monitoring of their condition. The frequency of monitoring for glaucoma and related conditions should therefore be stratified according to the risk of progression to blindness within the person's lifetime. People at a high risk need more frequent monitoring in services led by consultant ophthalmologists, with people at lower risk of blindness being monitored less frequently and not necessarily in hospital eye services. People with ocular hypertension and/or suspected chronic open angle glaucoma may thus be monitored in the community, in line with training and skill set requirements for non-medical healthcare professionals set out in CG85.

An unintended consequence of publication of CG85 in 2009 was high levels of false-positive referrals to hospital eye services. Recommendations for repeat measures and referral refinement were included in the NICE quality standard on glaucoma in adults (QS7), which helped but did not fully resolve this problem. A review of the evidence linked to case finding and thresholds for referral to hospital eye services has therefore been added to the scope of this update to guide NHS practice in these areas. Other areas in which there is new evidence since publication of CG85 have also been included.

3.2 Current practice

The surveillance review decision published in December 2015 outlined a number of areas of CG85 that need updating. Some drugs (for example, latanoprost) are now available in multiple generic products which may affect the findings of the health economic modelling conducted as part of CG85. A number of new questions have been identified and added to the scope to

cover case finding, particularly in high-risk groups. New questions are needed to:

- clarify the threshold for referral to hospital eye services
- define and clarify repeat measures, enhanced case finding and referral refinement
- clarify the role of optometrists
- incorporate new technologies, including I-Care tonometry.

These new questions aim to clarify referral criteria and avoid 'flooding' of hospital eye services with referrals of people at low risk of blindness, which has happened since publication of CG85. Because there are targets for seeing new patients, these people at low risk are given priority by NHS trusts ahead of people with advanced and potentially blinding glaucoma. It is therefore desirable to guide referral based on appropriate risk stratification.

3.3 Policy, legislation, regulation and commissioning

Legislation, regulation and guidance

There is legislation around independent prescribing for non-medically qualified healthcare professionals, including optometrists. Clarifying prescribing by optometrists in glaucoma care will avoid confusion about when such prescribing is appropriate.

Commissioning

Commissioning tools were developed as part of the NICE guideline on glaucoma: diagnosis and management (CG85) and the NICE quality standard for glaucoma in adults (QS7).

3.4 Glossary of terms used in this scope

Chronic open angle glaucoma

People with chronic open angle glaucoma have open or narrow (but not occludable or closed) anterior chamber angles with 1 or more of the following features:

- glaucomatous visual field loss
- glaucomatous optic neuropathy.

Ocular hypertension

Raised intraocular pressure.

Suspected glaucoma

People with suspected glaucoma have equivocal visual field loss and/or equivocal optic neuropathy suggesting possible glaucoma damage.

4 Further information

This is the draft scope for consultation with registered stakeholders. The consultation dates are 19 May to 16 June 2016.

The guideline is expected to be published in July 2017.

You can follow progress of the guideline.

Our website has information about how NICE guidelines are developed.