

Putting NICE guidance into practice

Resource impact report: Glaucoma: diagnosis and management (NG81)

Published: November 2017

Summary

This report focuses on the new recommendations from NICE's updated guideline on [glaucoma: diagnosis and management](#) that we think will have the greatest resource impact nationally (for England), and will need the most additional resources to implement or potentially generate the biggest savings. It is anticipated that this guideline will be cost saving as a result of the following recommendations:

- Increase in intraocular threshold to 24mmHg or more (1.1.5 and 1.5.9)
- Prescribing generic prostaglandin analogue (PGA) (1.5.3, 1.5.9 and 1.5.12)
- Intraocular pressure measurement in primary care should be performed using Goldmann-type applanation tonometry (GAT) equipment (1.1.1 and 1.1.8).

Implementing NICE's guideline may result in the following benefits and savings:

- Reduction in the number of secondary care outpatient appointments
- Reduction in prescription costs of more costly branded PGA drugs, for example if half the branded items currently prescribed were changed to generic around £11m savings would be made, which equates to £20,200 per 100,000 population
- Treating patients in the most appropriate settings.

Implementing the guideline may result in the following additional costs:

- Providing additional community optometry appointments
- Upfront acquisition costs for GAT equipment in primary care.

Suspected glaucoma is usually detected through eye tests provided by community optometrists and commissioned by NHS England. Patients are then referred to secondary care ophthalmology specialist services which are commissioned by clinical commissioning groups (CCGs). Additionally CCGs can commission enhanced optometric services from community optometrists.

1 Introduction

- 1.1 The guideline offers best practice advice on diagnosis and management of glaucoma in adults aged 18 and over.
- 1.2 This report discusses the resource impact of implementing the new recommendations from the updated guideline on [glaucoma: diagnosis and management](#) in England. It aims to help organisations plan for the financial implications of implementing this NICE guideline.
- 1.3 We encourage organisations to evaluate their own practices against the recommendations in the NICE guideline and assess costs and savings locally. Organisations can input estimates into the local resource impact template to reflect local practice and estimate the impact of implementing the guideline.
- 1.4 Suspected glaucoma is usually detected through eye tests provided by community optometrists and commissioned by NHS England. Patients are then referred to secondary care ophthalmology specialist services which are commissioned by clinical commissioning groups (CCGs). Additionally CCGs can commission enhanced optometric services from community optometrists. .

2 Background

- 2.1 Glaucoma is a common condition which may lead to blindness if not adequately treated. Around 10% of registrations for blindness are recorded as being primarily due to glaucoma.
- 2.2 Chronic open angle glaucoma (COAG) is the most common form of glaucoma in the UK, affecting about 2% of people over 40. In England and Wales, around 570,000 people have COAG. It is estimated that around half of cases are not diagnosed ([International Glaucoma Association](#)).

- 2.3 Ocular hypertension (OHT) is a major risk factor for developing COAG, and is found in around 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.
- 2.4 Most people with OHT and suspected glaucoma are identified by community optometrists during routine sight tests. The previous NICE glaucoma guideline CG85 recommends that these people are then referred to secondary care ophthalmology services where a diagnosis and management plan should be made by a consultant ophthalmologist.
- 2.5 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 \(QS7\)](#), which helped but did not fully resolve this problem.
- 2.6 Around 16% of NHS eye tests are performed on people with, or at risk of developing, glaucoma. This represents 2.1m appointments in England ([NHS Digital General Ophthalmic Services activity statistics 2016/17](#)).
- 2.7 Once diagnosed with COAG, people need lifelong monitoring so that progression of visual damage can be detected. An average of 40 follow up visits for monitoring are needed within their lifetime. The management of patients with glaucoma constitutes a major part of ophthalmologists' workload and accounts for more than one million outpatient visits per year.
- 2.8 The only known effective treatment for glaucoma is lowering eye pressure, and which is commonly treated using beta blockers and/or prostaglandin analogue (PGA) eye drops. The number of prescriptions dispensed for glaucoma in 2016/17 was 8.5m items,

at a cost of £88.8m ([NHS Business Services Authority Prescription Cost Analysis data](#)).

3 Significant resource impact recommendations

3.1 *Increase in intraocular threshold to 24 mmHg or more*

The guideline recommends:

- Refer for further investigation and diagnosis of COAG and related conditions if
 - IOP is 24 mmHg or more (1.1.5)
- Do not offer treatment to people with suspected COAG and IOP less than 24mmHg. Advise people to continue regular visits to their primary eye care professional, at clinically appropriate intervals (1.5.9)

Background

3.1.1 Currently patients with an intraocular pressure (IOP) measurement of more than 21 mmHg are considered to have ocular hypertension (OHT). This threshold is embedded in current management of OHT and comes from a study conducted in the 1960s.

3.1.2 Patients usually have their IOP measurement performed in community optometry appointments and are usually referred to secondary care services if their IOP is greater than 21 mmHg and their central corneal thickness (CCT) is less than 555 micrometres.

3.1.3 The guideline committee noted that the previous misinterpretation of CG85 had led to a significant number of referrals from single non-contact IOP measurements over 21mmHg. This has placed significant demand on secondary eye care services and led to a high volume of unnecessary referrals.

3.1.4 The committee felt confident from reviewing the clinical and cost-effectiveness evidence that a recommendation on referral and

treatment threshold could be made. A consensus decision was made to set the threshold of when to refer and initiate treatment for OHT at an IOP \geq 24 mmHg, and to remove the CCT measurement requirement. Most current practice refers and treats at an IOP > 21 mmHg.

- 3.1.5 People with IOP between 21-23 mmHg who will not be referred or treated, should be advised to book and attend regular eye tests, and therefore if their IOP level increases to \geq 24mmHg, it would be picked up at a future appointment, and they would then be referred and put on an appropriate treatment plan.
- 3.1.6 This change to practice should result in significantly fewer hospital outpatient appointments being required. This change may also result in an increased number of additional community optometry appointments depending on local circumstances.

Assumptions made

- 3.1.7 The unit cost of a first ophthalmology outpatient appointment is £139. The cost of a follow up ophthalmology outpatient appointment is £53 ([National tariff 2017/18](#)).
- 3.1.8 The cost of community optometry will vary according to local commissioning contracts.

Costs

- 3.1.9 Because of the variation in local optometry services, any costs relating to increasing community optometry capacity and savings generated from reduced secondary care appointments should be considered at a local level.
- 3.1.10 The [local resource template](#) can be used by organisations to model any local costs and savings associated with implementing these recommendations.

Benefits and savings

- 3.1.11 Additional savings may be generated from the avoidance of testing for CCT, and drug treatments for patients with an IOP less than 24 mmHg (see section 3.2).
- 3.1.12 Having well-defined referral and treatment pathways to identify patients with OHT and suspected COAG ensures patients are assessed and treated in the most appropriate setting.

Other considerations

- 3.1.13 Local referral pathways and community optometry assessments may need to be reviewed to implement recommendations on IOP thresholds. Commissioners and community optometrists may need to amend and develop locally commissioned enhanced contracts to ensure optimal care can be provided.

3.2 ***Prescribing generic prostaglandin analogues (PGAs)***

The guideline recommends:

- Offer a generic prostaglandin analogue (PGA) to people with IOP of 24 mmHg or more (OHT) if they are at risk of visual impairment within their lifetime (1.5.3)
- Offer a generic PGA to people with suspected COAG and IOP of 24 mmHg or more, in line with the recommendations on treatment for people with OHT (1.5.10)
- Offer a generic PGA to people with COAG (1.5.12)

Background

- 3.2.1 Around 4m prescriptions for PGAs are issued annually, costing £38m ([NHS Business Services Authority Prescription Cost Analysis data](#)).
- 3.2.2 One commonly used PGA drug is latanoprost which is no longer on patent and is significantly less expensive than other PGAs with total prescription costs of £9m per year. Branded PGAs are still

prescribed in 41% of cases, accounting for £28m of cost.

Prescription cost data for PGAs is shown in table 1.

Table 1 PGA prescription cost analysis England 2016/17

PGA drug name	Unit cost	Number of items prescribed		Annual cost	
	(£)	(000)	%	(£000)	%
Latanoprost	1.43	2,367	59	9,117	24
Bimatoprost	11.71	1,070	27	18,695	50
Tafluprost	12.20	91	2	1,425	4
Travoprost	10.95	508	12	8,393	22
TOTAL		4,036		37,630	

3.2.3 Significant savings could be generated from moving to generic PGA prescribing in all healthcare settings.

3.2.4 If half of the branded items currently prescribed were changed to generic PGAs then around £11m savings would be made, which equates to £20,200 per 100,000 population. A summary of this is shown in table 2.

Table 2 Potential savings from prescribing half of currently branded PGAs as generic

	Prescription cost analysis England 2016/17	
	Number of items (000)	Annual cost (£000)
<i>Current practice:</i>		
Generic PGAs prescribed	2,367	9,117
Branded PGAs prescribed	1,669	28,513
Total cost of current practice	4,036	37,630
<i>Future practice, if 50% branded PGAs changed to generic:</i>		
Generic PGAs prescribed	3,202	12,332
Branded PGAs prescribed	834	14,256
Total cost of future practice	4,036	26,588
National saving		11,042
Saving per 100,000 population		20

Assumptions made

3.2.5 The annual cost of generic PGA is £17 and the weighted average annual cost of branded PGAs is £134 ([NHS drug tariff September 2017](#)).

3.2.6 The population eligible for treatment with PGAs will vary locally depending on the implementation of the recommendations on changes to IOP thresholds and the removal of CCT measurement in people with OHT and suspected COAG (section 3.1 above).

Costs

3.2.7 Because of the change in treatment thresholds and variation prescribing practice, costs and savings should be considered at a local level.

3.2.8 The [local resource template](#) can be used by organisations to model any local costs and savings associated with implementing these recommendations.

Benefits and savings

3.2.9 There is likely to be a reduction in the number of patients with OHT or suspected COAG with IOP of less than 24 mmHg who are

prescribed PGA. However, patients with thicker corneas, who would not have been treated with PGAs in the past, will now be offered this treatment. Overall it is likely that the threshold changes will lead to additional savings.

Other considerations

3.2.10 There may be some resistance from clinicians and patients to changing practice, which could limit the potential savings available from generic prescribing.

3.3 *Other recommendations with a potential resource impact*

3.3.1 The guideline recommends that IOP measurement in primary care settings should be performed using Goldmann-type applanation tonometry (recommendations 1.1.1 & 1.1.8). Some community optometrists already have Goldmann-type applanation tonometry equipment, but there may be some upfront acquisition costs where it is not currently available. Commissioners should work with community optometrists to ensure that funding is available to enable the appropriate investment. There may be offsetting savings from more accurate measurements and fewer referrals to secondary care.

3.3.2 The guideline suggests that repeat measures could be considered, where appropriate, by community optometrists before referral (recommendation 1.1.5). This may lead to reduced inappropriate referrals, but will increase workload for optometry services.

3.3.3 The recommended monitoring intervals for people with OHT and suspected COAG are longer in the updated guideline (recommendations 1.4.12 and 1.4.13). This may result in savings from less frequent appointments for certain people.

4 Implications for commissioners

- 4.1 Community optometry services in England are primarily commissioned by NHS England through the General Ophthalmic Services (GOS) contract. Local commissioners can develop enhanced optometric services (EOS) in addition and are designed to meet local population needs. There is significant local variation in service configuration and regulation is not performed by a single overarching authority.
- 4.2 Enhanced contracts are often implemented to minimise false-positive referrals to hospital eye services. Appropriate configuring of services allows low risk people, with OHT and suspected COAG to be cared for in the community.
- 4.3 NHS Scotland has commissioned enhanced services, including those for glaucoma assessments, as part of the GOS contract. Community optometrists have been resourced with equipment and enhanced remuneration and the contract removes local variation to commissioning.
- 4.4 The guideline seeks to highlight appropriate pathways for patients with OHT, suspected COAG and COAG. The recommendations aim to reduce the number of inappropriate referrals to secondary care, by improved community assessments, discharging patients appropriately and raising IOP thresholds. The impact of these changes will be a substantial increase to community optometry workload.
- 4.5 Commissioners need to ensure that all optical practices are engaged in the new pathway and referral criteria are in place to enable successful implementation of the guideline.
- 4.6 Glaucoma falls under programme budgeting category 08X (problems of vision).

About this resource impact report

This resource impact report accompanies the NICE guideline on [glaucoma: diagnosis and management](#) and should be read in conjunction with it. See [terms and conditions](#) on the NICE website.

© NICE 2017. All rights reserved. See [Notice of rights](#).