

Avoiding unnecessary referral for glaucoma: use of a repeat measurement scheme

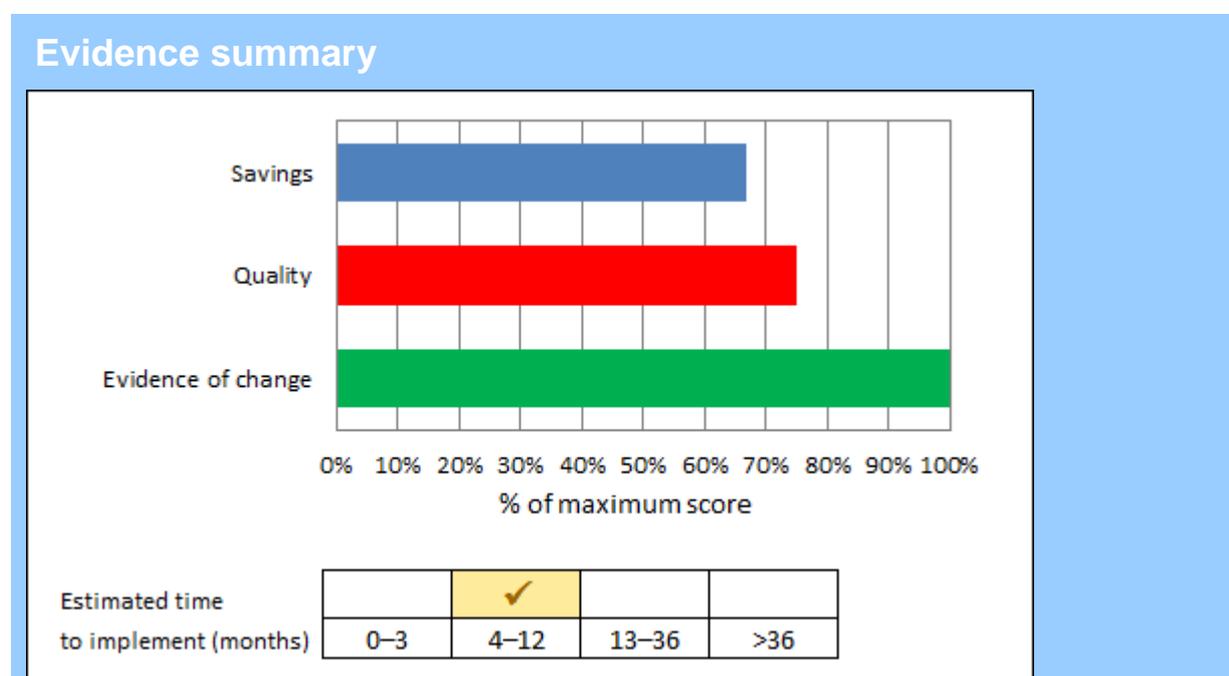
Provided by: Bexley Clinical Commissioning Group (CCG)

Publication type: Quality and productivity example

Sharing good practice: What are 'Proven Quality and Productivity' case studies?

The NICE Quality and Productivity collection provides users with practical case studies that address the quality and productivity challenge in health and social care. All examples submitted are evaluated by NICE. This evaluation is based on the degree to which the initiative meets the NICE Quality and Productivity criteria: savings, quality, evidence and implementability. The assessment of the degree to which this particular case study meets the criteria is represented in the summary graphic below.

Proven Quality and Productivity examples are case studies that show evidence of implementation and can demonstrate efficiency savings and improvements in quality.



Originally published: December 2011
Last reviewed: April 2016
Last updated: April 2016

Changes since the previous version

Published Quality and Productivity case studies are reviewed annually. One year after the case study has been published in the Local Practice Collection, the submitter of the case study is contacted to ask if there is further information relevant to the case study, and the case study updated as required. The case study has been amended to meet NICE style and any additional changes to this case study are outlined in the table below.

Case study section	Update
Introduction	No changes
Savings	No changes
Quality	No changes
Evidence	Updated to include locations where the service is currently available.
Implementation	No changes

Details of initiative

Purpose

To reduce the number of unnecessary suspect glaucoma referrals to the hospital eye service in Bexley, thereby improving quality of referral, generating savings and releasing capacity.

**Description
(including scope)**

A glaucoma repeat measurement scheme, in which the referring optometrist conducts the repeated test him/herself prior to referral or non-referral, was set up in 2005 for all patients who were registered with GPs in the Bexley area. The aim of the scheme was to enable optometrists/ophthalmic medical practitioners to refine their own referrals for suspected glaucoma before deciding

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whether or not a patient should be referred to a hospital eye service.

Glaucoma-related activity within the hospital eye service can account for approximately 20% of outpatient appointments. Most referrals originate from high street optometrists as a result of a routine sight test paid for either by the NHS, through the General Ophthalmic Services (GOS) or privately by the patient. The terms of the contract for NHS sight testing do not include funding for additional tests; therefore optometrists often have little choice but to refer patients for these tests to be performed in hospital, even though they could easily be conducted in primary care with appropriate funding. Referrals for suspect glaucoma have increased significantly since NICE published 'Glaucoma: diagnosis and management of chronic open angle glaucoma and ocular hypertension' (NICE clinical guideline 85) and are expected to rise over time with changes in population demographics and ethnicity.

Contact tonometry is used in hospital clinics for measuring intraocular pressure. Non-contact tonometry is most commonly used by UK optometrists in community practice and can give inconsistent readings or overestimates. Contact tonometry requires the use of local anaesthetic and is considered the most accurate measure. Goldmann Applanation Tonometry (GAT) is regarded as the gold standard (NICE clinical guideline 85) (Perkins is the hand-held version). Central visual field assessment can also provide useful diagnostic information but because of the subjective nature of the test, examination may produce anomalous results in the absence of pathology. NICE clinical guideline 85 refers to intraocular pressures consistently and recurrently above 21mmHg measured by GAT and therefore it is important that this method is used, particularly in borderline cases, before referral. The scheme allows for repeating suspect intraocular pressure measurements using an applanation method on up to two occasions, and/or repeating visual field tests on a separate occasion.

Topic	Commissioning, Contracting and Right Care.
Other information	A research paper was supplied that seeks to provide the clinical and financial evidence for the use of a repeat measurement scheme (visual fields and intraocular pressure) across populations rather than local schemes (Parkins and Edgar, 2011).

Savings delivered

Amount of savings delivered	Savings of up to 62% against the hospital eye service tariff have been achieved. The submission highlights a full-year saving of £32,500, which equates to £15,000 per 100,000 population. This is achieved through the management of the suspect readings in the community, rather than referral to the hospital eye service.
Type of saving	There is a mixture of real cash savings and improved productivity with the reduction in referrals to more expensive hospital care.
Any costs required to achieve the savings	Some resources may be required for initial refresher training in GAT for some optometrists. This was factored into the savings.
Programme budget	Vision.
Supporting evidence	<p>The main savings come from the avoidance of unnecessary referrals. There is a pressing need to apply programme budgeting to the whole glaucoma pathway.</p> <p>Estimates based on an annual audit of Bexley (population size 220,000) indicate that, since the publication of NICE clinical guideline 85 (2009), approximately 400 patients were suitable each year for repeat measurements, which would save £32,500 against the hospital eye service tariff. However, delivery depends on many variables: the number of optometrists and practices involved, the fees for each service item, the number of referrals from the scheme, the number of patients seeking eye care outside the area who bypass the service, the hospital eye service tariff for that year and the number of follow-up appointments within the hospital eye service.</p> <p>The research paper mentioned above describes all glaucoma referrals during a full year. Approximately half came through this scheme and the rest went through a clinical assessment service in which any unrefined referrals were seen by another practitioner. The former made savings, while the latter was essentially cost neutral with the hospital eye service tariff. This highlights the importance of encouraging optometrist participation in the scheme.</p>

Quality outcomes delivered

Impact on quality of care or population health	Clinical quality is improved through providing appropriate repeat testing in primary care to reduce the number of false positives, thereby refining referrals to the hospital eye service.
Impact on patients, people who use services and/or population safety	<p>The initiative does not impact on patient safety.</p> <p>The initiative was not able to evaluate the false negative rate. However, all patients using the scheme are advised to attend for an eye examination after 1 year.</p>
Impact on patients, people who use services, carers, public and/or population experience	Significant improvement in patient and carer experience, such as providing care closer to home and reducing unnecessary anxiety for the patient related to false positive referral.
Supporting evidence	The use of repeated measurements by optometrists, before instigating a referral to the hospital eye service, has huge potential to reduce unnecessary referrals to the benefit of commissioners, the hospital eye service and the patients. The cost implications of patients attending hospital, both in terms of transport and indirect costs, needs to be considered.

Evidence of effectiveness

Evidence base for case study	<p>The initiative is underpinned by:</p> <ul style="list-style-type: none">• NICE clinical guideline 85 (2009). Glaucoma: diagnosis and management of chronic open angle glaucoma and ocular hypertension.• NICE quality standard: glaucoma, referral 1.• NICE quality standard: glaucoma, referral 2. <p>The College of Optometrists and the Royal College of Ophthalmologists (2010). Guidance on the referral of glaucoma suspects by community optometrists.</p>
Evidence of deliverables from implementation	A 1-year audit in 2007/08 of using the repeat measurement scheme across the Bexley area showed 76% of patients were not being referred to the hospital eye service. In 44.5% of all patients in whom raised intraocular pressure was found by non-contact tonometry, repeated measurement by Goldmann or Perkins applanation tonometry resulted in readings < 22 mmHg or a

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reduction to less than a 5 mmHg difference between the two eyes. A commissioner cost analysis demonstrated that the repeat measurement scheme achieved 62% savings when compared with the hospital eye service tariff.

Since the publication of the NICE guidance in 2009, audit has shown that 35% of patients receive a second intraocular pressure reading and that 90% of practices are using the scheme.

Where implemented NHS England, Bexley.

Degree to which the actual benefits matched assumptions More than expected. This initiative exceeded assumptions, even before the publication of the NICE guidance. The initiative was introduced in 2005 and maintained a reduction in the number of suspect glaucoma referrals of approximately 33% each year until the publication of NICE clinical guideline 85 in 2009. Following this, there was a 40% increase, but this resulted from practices outside the Bexley area and just three local practices that chose not to use the scheme. The scheme continues to maximise the quality of referrals.

If initiative has been replicated how frequently/widely has it been replicated The scheme acknowledges use of the original protocol as developed by West Kent primary care trust. Since 2009, Greenwich and Bromley have initiated schemes locally, but evidence shows that cross border issues reduce their impact. Stockport is another example with similar audit results.

The Local Optical Committee Support Unit scheme is broadly similar. Since the issue of the glaucoma quality standard more schemes have been introduced, but they are not universal. In Scotland and Wales, the service is included in the main NHS eye examination contract and applies to all Optometrists.

Supporting evidence No further information provided.

Details of implementation

Implementation details Project milestones were established to implement and monitor the initiative:

- 1 service specification and forms agreed with the Local Optical Committee
- 2 engagement meeting with optometrists
- 3 refresher training where requested
- 4 communications with all stakeholders
- 5 audit and review

The following criteria are evidence based and should be considered as the main guidance when repeating

fields/intraocular pressures under this initiative. However some local variation is possible, if still within the scope of the NICE guidance.

Intraocular pressure

If the intraocular pressure measured during the patient's eye examination is >21mmHg by non-contact tonometry, optometrists/ophthalmic medical practitioners should repeat this measurement using Goldmann or Perkins tonometry in order to avoid unnecessary false-positive referrals. This can be done at the same appointment as the patient's eye examination. A fee may be claimed for this.

If the intraocular pressure is still only slightly above 21mmHg and discs and fields are normal, optometrists/ophthalmic medical practitioners are encouraged to ask the patient to return on a second occasion to repeat the applanation tonometry, again to determine whether this intraocular pressure is still above 21mmHg.

Only if the intraocular pressure is consistently or recurrently above 21mmHg (discs and fields normal) should the patient be referred for a diagnosis of ocular hypertension (OHT).

The College of Optometrists and The Royal College of Ophthalmologists have issued guidance on non-referral in two specific scenarios. This is for patients at low risk of significant visual field loss in their lifetime:

- Patients aged 80 years and over with measured intraocular pressures < 26 mmHg with otherwise normal ocular examinations (normal discs, fields and van Herick)
- Patients aged 65 and over with intraocular pressures of < 25 mmHg and with otherwise normal ocular examinations (normal discs, fields and van Herick).

The Colleges have advised that because these patients do not qualify for treatment under the NICE guidance, such patients should be reviewed every 12 months by the optometrist/ophthalmic medical practitioner.

Visual fields

In the case of suspected OHT or possible glaucoma or if the examining optometrist/ophthalmic medical practitioner decides that there is a clinical indication to perform a visual field test and the resulting visual fields are flagged up as 'suspicious' or 'defect' on the Humphrey, Henson or equivalent visual field screener, or there is a significant defect on the frequency doubling technology (without a

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known cause), a fee can be claimed for repeating the visual field test with the aim of avoiding a referral.

This applies even if the visual field defect is not thought to be because of glaucoma but a result of another pathology.

The repeated field test must be done using a suprathreshold or full threshold technique (not frequency doubling technology) and be supervised by an optometrist/ophthalmic medical practitioner. The aim of this is to determine whether the patient has a repeatable visual field defect that may be a result of glaucoma or another pathology, or whether the test results are only poor on that particular day.

Repeat field tests must be done on a different day from the eye examination to reduce the effects of patient fatigue. The additional fee is not payable for repeating visual field tests using the frequency doubling technology machine.

Time taken to implement	Can be achieved in the medium term: 3 months – 1 year.
Ease of implementation	Core-competency. The initiative supports multiple organisations within the NHS, in both community and hospital.
Level of support and commitment	All participants are fully committed to the initiative and actively engaged in delivery.
Barriers to implementation	<p>Twenty per cent of Bexley patients seek eye care outside the CCG area. The effectiveness of repeat measurement schemes may be undermined if patients do not stay within boundaries when seeking optical services.</p> <p>Another barrier to implementation is when not all optometrists want to participate in the scheme.</p>
Risks	Another scheme was implemented whereby refinement is undertaken by another practitioner. This scheme, although effective, is essentially cost neutral and only manages capacity. If the repeat measurement scheme was in place and supported across all practices, then the involvement of accredited optometrists/ophthalmic medical practitioners just to review selected unrefined glaucoma referrals is unnecessary.
Supporting evidence	The current GOS model promotes variation rather than quality. It pushes costs along the pathway when services need to be closer to the patient. This initiative would be more effective and efficient if implemented once across England rather than the current fragmented approach.

Further evidence

Dependencies

The success of the initiative depends on encouraging ownership of the pathway through support from the local hospital eye service (ophthalmologists) and optometrist/ophthalmic medical practitioner practices with appropriate funding in place for the intervention.

The importance of clinical leadership within the scheme cannot be underestimated.

Contacts and resources

Contacts and resources

If you require any further information please email: qualityandproductivity@nice.org.uk and we will forward your enquiry and contact details to the provider of this case study. Please quote reference [11/0018] in your email.

National Institute for Health and Clinical Excellence (2009) Glaucoma: diagnosis and management of chronic open angle glaucoma and ocular hypertension. NICE clinical guideline 85. London: National Institute for Health and Clinical Excellence. Available from www.nice.org.uk/guidance/CG85

National Institute for Health and Clinical Excellence Glaucoma quality standard: referral 1. Available from www.nice.org.uk/guidance/qualitystandards/glaucoma/Home.jsp

National Institute for Health and Clinical Excellence Glaucoma quality standard: referral 2. Available from www.nice.org.uk/guidance/qualitystandards/glaucoma/Home.jsp

Parkins DJ, Edgar DF (2011) Comparison of the effectiveness of two enhanced glaucoma referral schemes. *Ophthalmic & Physiological Optics* **31**, 343–352.

The College of Optometrists and The Royal College of Ophthalmologists (2010) Guidance on the referral of glaucoma suspects by community optometrists. London: The College of Optometrists and The Royal College of Ophthalmologists.

<http://www.college-optometrists.org> <http://www.rcophth.ac.uk>

ID: 11/0018r2

Published:

Last reviewed: 25 April 2016

Last updated: April 2016
