



Cataract surgery in England

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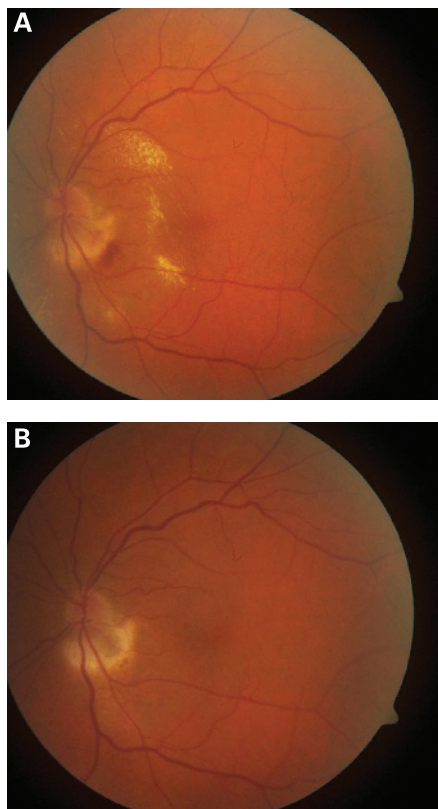


Figure 1 Left eye of a male patient in his early 70s with very exudative peripapillary choroidal neovascularisation before (A) and 1 year after one treatment/session of photodynamic therapy with Verteporfin (B).

Regarding the potential major risks of the surgical approach of peripapillary choroidal neovascularisation, we suggest that PDT could be the first therapeutic choice in these cases.

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Cost effectiveness of cataract surgery

According to the Canadian Community Health Survey, approximately 82% of the population of seniors aged 65–80+ (3 000 000 seniors) reported having vision problems in Canada.¹ Cataracts are the leading cause of vision impairment among seniors. During the period of 1994–2003, proportions of seniors with cataracts rose from 14 to 20% with populations aged 75 and over accounting for higher percentages.¹

Cataract surgery is among non-emergency surgical procedures with highest wait times in Canada. There was a 32% increase in cataract surgeries over 5 years between 1997/1998 and 2002/2003. In British Columbia, there were 11 816 patients waiting for surgery and 7897 patients completed in the 3 months from 31 August 2006 to 31 October 2006.² In addition to being a barometer of accessibility to healthcare services, cataract wait times are also a determinant of patient satisfaction, which in turn is correlated with increased health-related quality of life³ and possibly decreased injury risk.⁴

Delay of care is a persistent and undesirable feature of current healthcare systems.⁵ Waits and delays plague healthcare systems worldwide, and wait times for most specialists exceed those for primary care practices.⁶ From a clinical perspective, delay in necessary treatment due to surgical wait lists is a major concern.⁷ Establishing a clinically appropriate time that patients can safely wait for the operation is generally perceived as a method to prevent adverse outcomes of delay.⁸

The cost effectiveness of cataract surgery has been well established.^{9–10} In fact, modern techniques used for cataract surgery today result in rapid visual improvement with 50% of patients experiencing good vision by 24 h and 96–99% experiencing good vision by 4 weeks.¹¹ Evidence supports cataract surgery among older drivers in producing significant improvements in driving performance (best predicted by the concomitant improvement in contrast sensitivity), subsequent crash rates half that of older drivers with cataracts who opted not to have surgery, and self-reported improved visual function and distance estimation.⁴

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Cataract surgery in England

We read with interest the paper by Keenan and colleagues.¹

We recently studied the 2005/2006 Hospital Episode Statistics (HES) data for cataract and have reached similar conclusions. We agree with the authors' observations that as NHS cataract surgery rates (CSRs) in England have increased significantly in recent years, several questions are now raised. What is the appropriate CSR in a developed market economy? Is the observed geographical variation in CSR in England a marker of increased incidence and requirement for surgery in some "high activity" regions or a marker for overprovision? Conversely, in relation to lower activity regions, are there data set issues from the use of an administrative database such as the HES, or are there genuine clinical differences or variations in the organisational provision of cataract care? Private CSR rates are not considered as HES returns are restricted to NHS care. In our consideration of the most up-to-date HES returns, there are some data problems—due to coding issues—at some hospital Trusts (details on request). Observational studies of cataract surgical practice and population studies of regional prevalence of cataract are now needed. An electronic clinical database—a cataract national dataset—is the most pragmatic method of capturing such data in a timely fashion. Such an e-tool

would track changing thresholds for referral for cataract surgery and, importantly, consider outcomes for patients at a national level. Such an initiative is technically possible, is strongly supported by the Royal College of Ophthalmologists and now requires government support. With the UK government's commitment to developing an electronic patient care record, the deployment of a national electronic cataract dataset would greatly assist in our better understanding of these questions.

Care of NHS cataract patients has improved as a result of better technology and improved access to care, much of which followed the Action on Cataract (AoC) initiative.² A recent quality-improvement report in relation to NHS cataract care in Scotland has been compelling.³ However, ophthalmologists and commissioners of ophthalmic care should not become complacent. Pressures on eye-care services for the future are likely to be significant; as a result of the ageing population, lower clinical thresholds for safe treatment for cataract, the introduction of new treatments for patients with age-related maculopathy and other conditions.

Cataract surgery is a highly effective procedure which provides rapid improvement in vision-related as well as non-vision-related outcomes as well as being very cost effective.⁴ Benefits to patients are lifelong. The principal causal factor of adult cataract is ageing, and demand for services for cataract and other diseases of the ageing eye is expected to increase as the UK population ages. The indications for surgery as recommended in the consensus guidelines from the College, simply stated, are: failing vision attributable to lens opacity despite optimal optical correction or ocular comorbidity and patient willingness and fitness to undergo cataract surgery. The last issue is not problematic, as surgery is almost always carried out under day care and local anaesthesia. There is no evidence, that we are aware of, to suggest that patients are having "inappropriate" cataract surgery in the UK.

We are aware that some Primary Care Trusts are attempting to "demand manage" cataract surgery to certain thresholds of patient visual impairment. Such decisions, if simply based on Snellen visual acuity levels, are likely to disadvantage elderly patients.⁵ Attempts to include chronological age as a factor in healthcare policy are likely to be insensitive.⁶ Some have suggested that access to surgery could be determined by an assessment of a range of a patient's visual symptoms and disability, rather than a simple measurement of monocular visual acuity.⁷ We support the concept that decision to operate for cataract remains a matter of balanced clinical judgment and consensus reaching with the individual patient. The World Health Organization recommended 3000 cataract operations per

million residents as the minimum to eliminate blindness from cataract and recommended 3500 per million for established market economics for the year 2000.⁸ This latter target is being attained across the English NHS.

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The use of non-cycloplegic autorefraction data in general studies of children's development

We were interested to read the paper by Fotouhi and colleagues, on the prevalence of refractive errors in schoolchildren in Iran,¹ in which the authors used cycloplegic autorefraction for children aged 7–15 years and non-cycloplegic autorefraction for children aged 15–18 years. This paper illustrates the well-recognised need for cycloplegia in order to obtain accurate refractive estimates in children up to at least age 12.² However, the use of cycloplegia may reduce compliance and may not be possible in some situations—for example, studies of general child development such as the 1958 and 1970 national cohort studies in the UK. In such situations, other measures such as visual acuity may be used to infer the presence, but not the type of refractive error.³

We have faced this problem when participating with a birth cohort study (Avon Longitudinal Study of Parents and Children; ALSPAC⁴). Rather than collect no refractive data, we have examined the children with an autorefractor (a Cannon R50) without cycloplegia and conducted a nested comparison with refraction under cycloplegia, to assess the most appropriate interpretation and uses for the non-cycloplegic data. We included 7-year old children with acuity worse than 0.2 logMAR (6/9), despite the use of a pinhole (n = 414), and we compared the non-cycloplegic autorefractors with cycloplegic retinoscopy by an experienced optometrist in the 345 (83.3%) who agreed to the use of cycloplegic drops. Cycloplegia was induced using 1–2 drops of 1% cyclopentolate in each eye. After 20 min, the optometrist carried out the examination if the reflex was stable or added more drops if needed.

We assessed the data for the right eyes, with Bland–Altman plots and Receiver Operator Characteristic (ROC) curves (where different cut-off points are used to predict the presence or absence of particular refractive errors). The Bland–Altman analyses confirmed the expected bias towards "over-minussing" the spherical refractive error, increasing as the amount of hypermetropia increased (p < 0.001). Estimation of astigmatic error showed no such bias, and was on average moderately accurate, but with large differences between methods for some individuals: the mean (SD) difference between methods was –0.13 (0.53) D, with the range of differences –3.00 to +1.00 D.

Table 1 illustrates the results obtained from ROC curves, with sensitivities shown for two arbitrarily set levels of specificity: $\geq 95\%$ and $\geq 99\%$. The sensitivities of the autorefractor are best when screening for hypermetropia. If the target level of mean spherical equivalent (MSE) hypermetropia +2.00 is used as a cut-off point to identify affected children, then nearly all children identified will have hypermetropia at least that severe ($\geq 99\%$ specificity), and 71% true cases will be detected. The sensitivities for myopia, astigmatism and anisometropia are worse, particularly at 99% specificity. Repeatability data are shown in table 2 and are comparable with other devices in the literature.

From these analyses, we suggest that these autorefractor data can be used to identify hypermetropic children with reasonable accuracy, although any prevalence data will underestimate the true value. The data for myopia, astigmatism and anisometropia are not accurate enough to use for prevalence estimates. Instead they could be better used to identify subgroups of children "enriched" with children who truly have the refractive error in question, as well as some who do not, eg, myopes and pseudomyopes, in risk-factor analyses.