

How to defuse a demographic time bomb: the way forward?

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The pressure of rising demand on ophthalmic services in the United Kingdom, and the negative effect of capacity shortfall on clinical outcomes are well-attested.¹ With the major ophthalmic conditions of public health interest, cataract, glaucoma, age-related macular degeneration (AMD), and diabetic retinopathy (DR), being strongly associated with increasing age, the capacity/demand disequilibrium is expected to worsen with an ageing demographic. Epidemiological modelling for The Royal College of Ophthalmologists (RCOphth) commissioned Way Forward project predicted that between 2015 and 2035 the United Kingdom will experience a growth in case numbers of about 44% for glaucoma, 50% for operable cataract, and 59% for AMD (<https://www.rcophth.ac.uk/standards-publications-research/the-way-forward/>). Published projections suggest that diabetic numbers will also rise by ~50%.^{2,3}

Rising prevalence is compounded by expansion of cost-effective but labour-intensive treatment options and lower treatment thresholds without a commensurate growth in resources. Human resources are a particular problem with a global shortage of ophthalmologists,⁴ and realisation that recruitment of staff from the health systems of countries with far greater ophthalmic human resource problems than the United Kingdom is no longer ethically acceptable.⁵

A paradigm shift is required in the delivery of ophthalmic care to protect patients. The Way Forward project was constructed to facilitate shared learning as innovations in service design are identified and disseminated. The full reports are available online ([www.rcophth.ac.uk/standards-publications-research/the-way-](http://www.rcophth.ac.uk/standards-publications-research/the-way-forward/)

www.rcophth.ac.uk/standards-publications-research/the-way-forward/); this article provides a summary of the findings with exemplars.

Way Forward methodology

A literature review was conducted, and semi-structured telephone interviews, offered via lead clinicians, were completed with consultant ophthalmologists responsible for glaucoma ($n = 43$), cataract (50), DR (36), and AMD (30) from December 2015 to June 2016.

Glaucoma

Demand management

Typically ~40% of community optometrist referrals for suspected glaucoma are false positives^{6,7} and are amenable to reduction by referral filtering schemes.^{6–9} Two-thirds of glaucoma consultants reported such schemes in their locality, so for one-third, the opportunity exists to, at least, start a repeat measures scheme for intra-ocular pressure (IOP)-based referrals.

Pathway redesign

Optimal utilisation of the decision-making ability of senior ophthalmologists for complex cases is essential. This is not a new concept with early innovators running modified services in the 1990s.¹⁰ Stratification of cases by risk permits allocation of low-risk cases to either a virtual clinic, or a multi-disciplinary team (MDT) clinic, with optometrists/nurse practitioners/orthoptists (non-medical health-care practitioners (HCPs)) requesting consultant input only as required. Virtual clinics involve visual acuity (VA), IOP, and visual field data acquisition by HCPs/technicians, often also obtaining disc images, pachymetry, and even gonioscopy. Consultant review of the data/images is then undertaken (typically 10–12



Figure 1 The lightest cataract pathway involved no routine review after first or second eye.

patients reviewed per hour) and letters sent to patients to inform them of the outcome.

Task shifting

Task shifting can be a two-step process.¹¹ Once appropriate complexity patients are being managed satisfactorily by MDT in the hospital, the location of this devolved clinical work may be shifted into the community; convenient for patients but potentially more expensive.^{12,13}

Cataract

Demand management

A survey in England showed that 71/151 commissioning bodies explicitly ration access to cataract surgery despite poor evidence to guide criteria setting,^{14,15} and it being contrary to RCOphth guidelines.¹⁶

Pathway redesign

Bilateral cataract patients can be treated with just three hospital visits (Figure 1); safety in this pathway is permitted by easy-access symptom-driven post-operative review, autorefractometry guiding second eye lens selection. A less radical change, well established in many units is to discharge uncomplicated second eye cataract patients from theatre. This is an easy win demand reduction, but refractive outcome data collection must be monitored.

Task shifting

Nine out of ten departments still routinely reviewing post-operative cataract patients use non-ophthalmologists. More difficult to replicate perhaps is the one in five departments who has trained HCPs seeing cataract referrals; ophthalmologists only see the patient for surgery. This pathway relies on high-quality MDT members and does not adhere to current RCOphth guidelines.

Efficient surgical service delivery

Despite the recommendation from RCOphth and Monitor that one cataract operation is carried out every 30 min,¹⁷ the mode number of cases reported at interview was 6 on

4 h lists both for training and consultant-only lists. However, five departments routinely scheduled ≥ 10 cases. The expense of anaesthetists can be saved on dedicated local anaesthetic lists, provided staff have appropriate life support training.

Age-related macular degeneration

Demand management

Referral refinement was not a perceived need, but two-thirds of departments run virtual AMD clinics (VA/OCT/photo), and for some, this is their standard initial evaluation for all new referrals to minimise delays for high-risk cases, and discharge of false-positive referrals.

Pathway redesign

AMD pathways are in a state of evolution nationally.¹⁸ Almost one-third of departments offer one-stop assessment/injection for first visits, and almost half do for follow-ups.

Task shifting

Virtual clinics can be quality assured, hence many consultants pass on the virtual review work to trained HCPs. Non-ophthalmologist injection services are commonplace, however over one-third of departments still have all injections given by ophthalmologists.¹⁹

Diabetic retinopathy

Demand management

Repeated local audits showed $>50\%$ of new DR referrals were for maculopathy that did not require intervention.²⁰ Half of the consultants interviewed had virtual review clinics for maculopathy, and in some cases, the screening programme itself has taken on this work.²¹ Screeners time can be freed up by automated computer disease/no disease grading removing 30% of images from their workload.²²

Task shifting

As well as referral refinement, the pool of experienced DR screening graders can be utilised for monitoring treated proliferative disease.²³

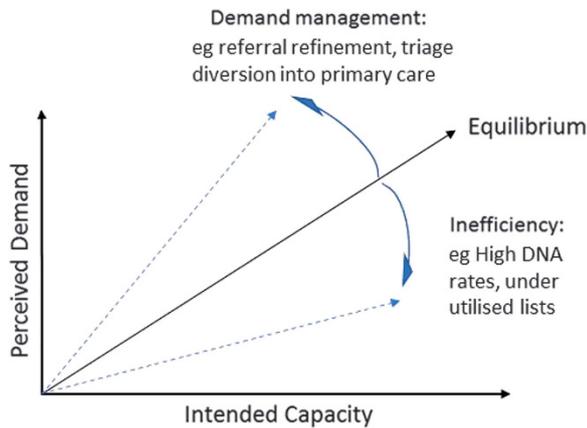


Figure 2 Strategic intentional demand capacity management is essential.

Pathway redesign

Capacity wastage from failure to attend (DNA) must be minimised using the evidence-based interventions that exist (Figure 2).²⁴

Discussion

The Way Forward project has given some sense of the scale of the future demand facing UK eye departments, and some of the options to deal with this demand already in use by colleagues around the country. Inaction is not an option. It is incumbent on each department in the United Kingdom to identify opportunities for service redesign to maximise efficiency and reduce unwarranted variation. Tasks that can be safely devolved to trained HCPs or areas where technology may offer time savings should also be explored, such that senior ophthalmologists are fully engaged in activities that genuinely require the training, knowledge, and experience that they have, and so that every MDT member, the ophthalmologist included, is operating at the top of their grade.

Conflict of interest

The authors declare no conflict of interest.

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- JC Buchan¹, W Amoaku², B Barnes³, A Cassels-Brown⁴, BY Chang⁴, J Harcourt⁵, D Shickle⁶, AF Spencer⁷, SA Vernon⁸ and C MacEwen⁹
- ¹ International Centre for Eye Health, London School of Hygiene and Tropical Medicine, London, UK
² University of Nottingham, Academic Ophthalmology, Eye and ENT Centre, University Hospital QMC, Nottingham, UK
³ The Royal College of Ophthalmologists, London, UK
⁴ Department of Ophthalmology, St James's University Hospital, Leeds, UK
⁵ Eye Department, Aberdeen Royal Infirmary, Aberdeen, UK
⁶ Leeds Institute of Health Sciences, University of Leeds, Leeds, UK
⁷ Manchester Royal Eye Hospital, Manchester, UK
⁸ The BMI Park Hospital, Nottingham, UK
⁹ Ninewells Hospital, Dundee, UK
- Correspondence: JC Buchan, International Centre for Eye Health, London School of Hygiene and Tropical Medicine, Keppel Street, London WC1E 7HT, UK
Tel: +44 (0)11 3243 3144;
Fax: +44 (0)11 3206 6044.
E-mail: john.buchan@lshtm.ac.uk