Institution: City, University of London

Unit of Assessment: 03 Allied Health Professions, Dentistry, Nursing and Pharmacy

Title of case study: Improving Eye Care Delivery through community optometric practice

Period when the underpinning research was undertaken: 2012 - 2016

Details of staff conducting the underpinning research from the submitting unit:

Name(s):	Role(s) (e.g. job title):	Period(s) employed by submitting HEI:
Prof. John Lawrenson	Professor of Clinical Visual Science	1994 – present
Prof. David Edgar	Professor of Clinical Optometry	1977 – present (emeritus since 2014)
Dr Evgenia Konstantakopoulou	Research assistant	2013 – 2016

Period when the claimed impact occurred: 2013 - ongoing

Is this case study continued from a case study submitted in 2014? No

1. Summary of the impact

Demographic trends in the UK population have placed an increasing burden on Hospital Eye Services (HES). Research conducted at City, University of London has demonstrated that community optometrists are able to provide specialist services that match care in hospital eye departments and that these services are clinically effective, cost-effective and associated with high levels of patient satisfaction. Our findings have influenced national ophthalmic service redesign through the commissioning of optometrist-delivered specialist services. In parallel, City has developed clinical management guidelines (CMGs) for common eye conditions that have been adopted in national eye care pathways and have been incorporated into clinical guidelines and decision support tools internationally.

2. Underpinning research

There is an escalating problem in the delivery of emergency and routine eye care services in the UK. For example, the number of patients attending emergency eye units in London is increasing by approximately 10% per year. Up to 20% of referrals to ophthalmology clinics are for suspected glaucoma, with an estimated annual cost of monitoring these patients of over GBP 22,000,000. There is an urgent need to manage the flow of patients between primary and secondary care and ensure that patients are seen by the most appropriate healthcare professional, in the most suitable setting, and in a timely manner, to minimise the likelihood of visual loss. There are several new models of community-based eye care, such as Minor Eye Conditions Services (MECS) and community-based Glaucoma Referral Filtering Services (GRFS) for suspect glaucoma, that have the potential to decrease demand on the HES by reducing unnecessary referrals.

Research led by academics at City, University of London (*Lawrenson and Edgar*), in collaboration with health economists from the University of Manchester (*Sutton, Mason,* and *Forbes*) has significantly strengthened the evidence-base for the clinical effectiveness and cost-effectiveness of MECS and GRFS and has shown that the schemes are well-received by all stakeholders.

The College of Optometrists-funded Enhanced Scheme Evaluation Project (ESEP), conducted in the period 2012-2016, evaluated models of community-based eye care services to assess their clinical effectiveness and cost-effectiveness. This mixed-methods study used a combination of evidence synthesis, which is a new method of systematic review designed for complex policy interventions, and a detailed case study methodology.

As part of this project, we published the first evidence synthesis on the effectiveness of enhanced (community) eye care services in the UK [3.1]. This widely cited realist synthesis found evidence that optometrists are able to work safely in defined areas of clinical practice while maintaining or improving the quality of outcomes for patients. Detailed case-study evaluations of MECS and

GRFS have demonstrated clinical effectiveness, clinical safety, reduction in hospital attendances and waiting times, cost savings and high levels of patient satisfaction [3.2 – 3.4]. For example, compared to a companion area without the service, MECS led to a differential reduction in general practitioner (GP) referrals to hospital ophthalmology departments of 40-75% with a 14% reduction in unit costs and an associated shortening of waiting times [3.3]. Similarly, GRFS resulted in a decrease of 53% in the number of false positive glaucoma referrals, with a false negative rate of <1%. Reducing false positive referrals clearly benefits both the hospital and the patient and can be achieved without compromising clinical safety.

A body of research by *Lawrenson* over the past 10 years has led to the publication of systematic reviews in priority areas of eye care to inform decision-making and explore major gaps in the clinical evidence base for eye care This has included 10 Cochrane reviews and updates, and seven reviews published in ophthalmology and optometry journals. This research expertise, (*Lawrenson* is co-ordinating editor for Cochrane Eyes and Vision), has been applied to the writing of systematic reviews [3.5] and conducting evidence syntheses for the development of clinical management guidelines (CMGs), which are effectively commissioned items of research synthesis [3.6]. CMGs are a key component of the clinical effectiveness of new models of community-based eye care; they have been shown to address clinical uncertainties and support community optometrists in the diagnosis and management of eye conditions that present most frequently in primary care.

3. References to the research

[3.1] Baker H, Ratnarajan G, Harper RA, Edgar DF, Lawrenson JG. Effectiveness of UK optometric enhanced eye care services: a realist review of the literature. Ophthalmic Physiol Opt. 2016;36(5):545-57. https://doi.org/10.1111/opo.12312 .

[3.2] Konstantakopoulou E, Edgar DF, Harper RA, Baker H, Sutton M, Janikoun S, Larkin G, Lawrenson JG. Evaluation of a minor eye conditions scheme delivered by community optometrists. BMJ Open. 2016;6(8):e011832. http://dx.doi.org/10.1136/bmjopen-2016-011832 .

[3.3] Mason T, Jones C, Sutton M, Konstantakopoulou E, Edgar DF, Harper RA, Birch S, Lawrenson JG. Retrospective economic analysis of the transfer of services from hospitals to the community: an application to an enhanced eye care service. BMJ Open. 2017 Jul 1;7(7). http://dx.doi.org/10.1136/bmjopen-2016-014089

[3.4] Forbes H, Sutton M, Edgar DF, Lawrenson J, Spencer AF, Fenerty C, Harper R. Impact of the Manchester Glaucoma Enhanced Referral scheme on NHS costs. BMJ Open Ophthalmol. 2019 Sep 1;4(1):e000278. http://dx.doi.org/10.1136/bmjophth-2019-000278

[3.5] Evans JR, Lawrenson JG. Antioxidant vitamin and mineral supplements for slowing the progression of age-related macular degeneration. Cochrane Database Syst Rev. 2017 Jul 31;7(7):CD000254. doi: 10.1002/14651858.CD000254.pub4.

[3.6] Clinical Management Guidelines (College of Optometrists) https://www.college-optometrists.org/guidance/clinical-management-guidelines.html

All papers were published in prestigious academic journals that apply a rigorous peer-review process prior to acceptance. The research that generated outputs 3.1 – 3.4 was supported by a research grant from the College of Optometrists: Enhanced Scheme Evaluation Project, 2012 - 2016. Principal Investigators: *Lawrenson* and *Harper*. Funding value: GBP 294,287.

4. Details of the impact

The research conducted as part of the ESEP has provided a solid evidence base for the clinical safety and cost-effectiveness of enhanced services provided by community optometrists. The outputs from the ESEP, and previous research by the City team investigating effectiveness and refinement of glaucoma referral schemes, have informed commissioning guidance from NHS England, the College of Optometrists and the Royal College of Ophthalmologists, and NHS Improvement [5.1]. As a result, these outputs have played a major role in building the business case for Local Optical Committees (LOCs) to influence the decisions of Clinical Commissioning Groups (CCGs) to adopt MECS and GRFS pathways. The director of commissioning strategy for

South East London CCG has commented "*The CCG and the City team have directly supported more than 20 CCGs to implement their own schemes, but know that the work that we did has become almost standard practice for the whole of the NHS, and has been cited as the exemplar model by the Royal National Institute of Blind People.*" [5.2].

Minor Eye Conditions Services

The percentage of LOC regions in England that operate a MECS has increased from 55% to 71% since 2015. Over the same period an additional 4,000 optometrists have undertaken MECS accreditation. The commissioning of MECS significantly impacts referral rates from primary to secondary care, reducing the 1.7 million first attendances at ophthalmology outpatient departments by at least 10%. This is the equivalent of 170,000 HES appointments, representing net savings of GBP5,500,000.

In 2017, the Royal National Institute of Blind People, in partnership with Specsavers, the largest chain of optical practices in the UK, hosted a series of policy roundtable discussions at which a range of experts including patients, health professionals and commissioners came together to explore how improving delivery in eye care services could help increase capacity. Research from the ESEP was used as evidence for the clinical effectiveness and cost-effectiveness of MECS [5.3]. In 2016, Specsavers announced that more than 2000 of its optometrist employees have successfully become accredited to offer MECS in England [5.4], a strategic decision underpinned by our research [5.5].

Community-based Glaucoma Referral Filtering Services

Our research has also demonstrated the clinical effectiveness and cost-effectiveness of glaucoma referral filtering services (GRFS) in reducing referrals and freeing capacity in glaucoma clinics. The NICE guideline committee for glaucoma, which included ESEP team member *Fenerty,* recommended that *'people planning eye care services should consider commissioning referral-filtering services (for example, repeat measures, enhanced case-finding, or referral refinement) for chronic open angle glaucoma and related conditions'* [5.6]. Commissioning guidance has also noted "*Independent monitoring of patients with a diagnosis of glaucoma (which must be established by a consultant ophthalmologist) is permitted and encouraged by NICE for those optometrists and other HCPs with training, skills and experience to the level of the CoO [College of Optometrists] Professional Diploma in Glaucoma*" [5.7]. The NICE recommendation was informed by the findings of ESEP and previous research on referral refinement by members of the City team.

Clinical Management Guidelines

Underpinned by research over the past 10 years in priority areas of eye care, *Lawrenson* and *Buckley* have been engaged by the College of Optometrists through academic consultancy to lead on the development of Clinical Management Guidelines (CMGs) for the diagnosis and management of a range of eye conditions that present with varying frequency in primary and first contact care. A comprehensive process of identifying and rating the quality of evidence on the management of over 60 conditions and making specific treatment recommendations underpins each guideline (updated biennially) [5.8]. The Commission for Human Medicines (CHM) used the CMGs in their consideration of the proposal to allow optometrists to train as Independent Prescribers. They were also instrumental in the decision by the CHM to recommend that suitably qualified optometrist independent prescribers could prescribe any licensed medicine (for conditions affecting the eye, and the tissues surrounding the eye, within their recognised area of expertise and competence). The CMGs therefore have significant ongoing impact because they continue to inform the content of the Common Final Assessment for Independent Prescribing, the accreditation assessment conducted by the College of Optometrists for entry into the specialist register of therapeutic prescribers [5.9]. There are now over 500 practising optometrist independent prescribers working in specialist hospital settings and in the community. The CMG pages account for 22% of all unique page views to the College of Optometrists' website (2,284,305 unique page views to the website and 502,387 to CMG pages in the year 2018-19).

The CMGs are also written into the service specifications for MECS pathways by the Local Optical Committee Support Unit (LOCSU), the Northern Ireland Primary Eyecare Assessment and

Referral Scheme (PEARS) and, more recently, the national service framework for COVID-19 Urgent Eyecare Services (CUES) [5.10]. CUES acted as urgent eye care community hubs during the coronavirus pandemic. The quality of the guidelines has been recognised, and they inform the management of eye conditions by optometrists and other primary healthcare professionals e.g. CMGs are referenced in BMJ Evidence and NICE Clinical Knowledge Summaries (for GPs) [5.11].

5. Sources to corroborate the impact

[5.1] Commissioning Guidance informed by our research includes: "Transforming elective care services ophthalmology" from NHS England p48 (available from https://www.england.nhs.uk/wp-content/uploads/2019/01/ophthalmology-elective-care-handbook-v1.1.pdf accessed 19 March 2021); Ophthalmic Services Guidance: Primary Eye Care, Community Ophthalmology and General Ophthalmology from the College of Optometrists and the Royal College of Ophthalmologists p14 (available from https://www.college-optometrists.org/resourceLibrary/ophthalmic-services-guidance--primary-eye-care--community-ophthalmology-and-general-ophthalmology.html accessed 19 March 2021); and the Ophthalmology GIRFT Programme National Speciality Report, p 36 (available from https://gettingitrightfirsttime.co.uk/wp-content/uploads/2019/12/OphthalmologyReportGIRFT19P-FINAL.pdf accessed 19 March 2021).

[5.2] Testimonial from the Director of Commissioning Strategy, South East London CCG

[5.3] The State of the Nation Eye Health 2017: A Year in Review. p30 https://www.rnib.org.uk/sites/default/files/APDF%20The%20State%20of%20the%20Nation%20Eye%20Health%202017%20A%20Year%20in%20Review.pdf

[5.4] Over 2000 Specsavers optometrists are now MECS-accredited, Optometry Today, 1st September 2016. (Available from https://www.aop.org.uk/ot/industry/high-street/2016/09/01/over-2000-specsavers-optoms-now-mecs-accredited accessed 19 March 2021).

[5.5] Testimonial from the Director of Professional Services, Specsavers Optometrists.

[5.6] Glaucoma: diagnosis and management. NICE Guideline 81. Methods, evidence and recommendations. October 2017. (Available from https://www.nice.org.uk/guidance/ng81/evidence/full-guideline-pdf-4660991389 accessed 19 March 2021).

[5.7] The Way Forward Glaucoma Report (Royal College of Ophthalmologists). (Available from https://www.rcophth.ac.uk/standards-publications-research/the-way-forward/ accessed 19 March 2021)

[5.8] College of Optometrists. Clinical Management Guidelines. (Available from https://www.college-optometrists.org/guidance/clinical-management-guidelines.html accessed 19 March 2021).

[5.9] College of Optometrists. Independent Prescribing - the examination. (Available from https://www.college-optometrists.org/cpd-and-cet/training-and-qualifications/qualifying-as-an-independent-prescriber/the-examination.html accessed 19 March 2021).

[5.10] Clinical Management Guidelines have been written into the service specification for MECS pathways by: the Local Optical Committee Support Unit (LOCSU), the Northern Ireland Primary Eyecare Assessment and Referral Scheme (PEARS) and the COVID-19 Urgent Eyecare Service (CUES) in England, Section 4.1 Service Standards (College of Optometrists)

[5.11] References to Clinical Management Guidelines appear in BMJ Best Practice (Example available from https://bestpractice.bmj.com/topics/en-gb/963 accessed 19 March 2021) and NICE Clinical Knowledge Summaries such as those for infective conjunctivitis (available from https://cks.nice.org.uk/topics/conjunctivitis-infective/references/ accessed 19 March 2021), dry eye syndrome (available from https://cks.nice.org.uk/topics/dry-eye-

syndrome/references/ accessed 19 March 2021) and blepharitis (available from https://cks.nice.org.uk/blepharitis#!supportingevidence accessed 19 March 2021).