



LOCSU

Literature Report - Cataract

June 2025

A literature search was done to identify published research and case studies on cataract services in England. Key documents are detailed here and will be updated regularly.

Please contact LOCSU by emailing info@locsu.co.uk if you are aware of other published research or case studies that could be included.

| Title | Citation | Publication | Authors | Abstract Summary | LOCSU Notes |
|--|---|---|--|---|--|
| <u>Accuracy and safety of an autonomous artificial intelligence clinical assistant conducting telemedicine follow-up assessment for cataract surgery.</u> | Meinert E, Milne-Ives M, Lim E, Higham A, Boege S, de Pennington N, Bajre M, Mole G, Normando E, Xue K. Accuracy and safety of an autonomous artificial intelligence clinical assistant conducting telemedicine follow-up assessment for cataract surgery. EClinicalMedicine. 2024 Jul 3;73:102692. doi: 10.1016/j.eclim.2024.102692. PMID: 39050586; PMCID: PMC11266473. | EClinicalMedicine. 2024 Jul 3;73:102692 Meinert E, Milne-Ives M, Lim E, Higham A, Boege S, de Pennington N, Bajre M, Mole G, Normando E, Xue K | Meinert E, Milne-Ives M, Lim E, Higham A, Boege S, de Pennington N, Bajre M, Mole G, Normando E, Xue K | 202 patients were included in the analysis, with data collection completed on 23 March 2022. Dora R1 demonstrated an overall outcome sensitivity of 94% and specificity of 86% and showed moderate to strong agreement (kappa: 0.758-0.970) with clinicians in all parameters. Safety was validated by assessing subsequent outcomes: 11 of the 117 patients (9%) recommended for discharge by Dora R1 had unexpected management changes, but all were also recommended for discharge by the supervising clinician. Four patients were recommended for discharge by Dora R1 but not the clinician; none required further review on callback. Acceptability, from interviews with 20 participants, was generally good in routine circumstances but patients were concerned about the lack of a 'human element' in cases with complications. Feasibility was demonstrated by the high proportion of calls completed autonomously (195/202, 96.5%). Staff cost benefits for Dora R1 compared to standard care were £35.18 per patient. | <p>This 4 month study assessed the use of the AI-powered telemedicine system, Dora R1, for follow-up care after cataract surgery. It involved 225 patients from 2 UK hospitals, comparing the decisions of Dora R1 with ophthalmologists regarding clinical concerns and the need for further review. Dora R1 demonstrated an overall outcome sensitivity of 94% and specificity of 86% and showed moderate to strong agreement with clinicians in all parameters.</p> <p>Patient acceptability was generally positive, (20 patients surveyed), although some were concerned about the lack of human interaction, especially in complex cases. Dora R1 demonstrated feasibility with 96.5% of calls completed autonomously. However, the study also highlighted the importance of digital equity, as some patients with hearing impairments or neurodiverse conditions may face challenges with the system. Further research is needed to confirm Dora R1's effectiveness in broader, real-world settings.</p> |

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| <p><u>Analysis of cataract referrals from community optometrists and general practitioners and subsequent clinic visit outcomes in a university hospital in the west of Ireland</u></p> | <p>Canning P, Neary S, Mullaney P. Analysis of cataract referrals from community optometrists and general practitioners and subsequent clinic visit outcomes in a university hospital in the west of Ireland. Ir J Med Sci. 2023 Aug;192(4):1987-1991. doi: 10.1007/s11845-022-03175-8. Epub 2022 Sep 29. PMID: 36173544.</p> | <p>Ir J Med Sci. 2023 Aug;192(4):1987-1991</p> | <p>Canning P, Neary S, Mullaney P</p> | <p>It is possible that an appropriately focussed referral form will aid in triaging cataract referrals and potentially reduce unnecessary appointments.</p> | <p>It is possible that an appropriately focussed referral form will aid in triaging cataract referrals and potentially reduce unnecessary appointments.</p> |
| <p><u>Developing refractive management recommendations for patients undergoing cataract surgery: A Delphi study.</u></p> | <p>Charlesworth E, Ursell P, Ho KC, Keay L, Elliott DB. Developing refractive management recommendations for patients undergoing cataract surgery: A Delphi study. Ophthalmic Physiol Opt. 2023 Jan;43(1):150-159. doi: 10.1111/opo.13069. Epub 2022 Nov 16. PMID: 36385383; PMCID: PMC10100233.</p> | <p>Ophthalmic Physiol Opt. 2023 Jan;43(1):150-159</p> | <p>Charlesworth E, Ursell P, Ho KC, Keay L, Elliott DB</p> | <p>Recommendations to guide the pre and postoperative refractive management of patients undergoing cataract surgery were agreed between highly experienced optometrists and ophthalmologists using a 2-round Delphi method. Patients would benefit from consistent target refraction discussions, postoperative refractive management and driving advice, and recommendations were of particular benefit to less experienced optometrists.</p> | <p>The number of cataract surgeries is increasing annually. Patient experiences reveal challenges in refractive management, including inaccessible preoperative target refraction discussions and a lack of knowledge about postoperative spectacle prescriptions. Practitioner barriers such as inexperience and time constraints further complicate these discussions. Patients use various coping strategies between first- and second eye surgeries, but no best practice guidelines exist. Additionally, there is inconsistent information about when patients can resume driving post-surgery. A study using the Delphi consensus method developed 15 recommendations to address these issues. Implementing these recommendations in practice could both remediate areas of concern for patients, help optometrists with their clinical decisions and discussions and may be of particular benefit to less experienced optometrists. Joint refractive management by optometrists and ophthalmologists could provide high-quality and convenient patient care if agreed protocols and appropriate training and remuneration were provided.</p> |

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| <u>A proposed redesign of elective cataract services in Scotland - pilot project</u> | Dhillon N, Ghazal D, Harcourt J, Kumarasamy M. A proposed redesign of elective cataract services in Scotland - pilot project. Eye (Lond). 2022 Nov;36(11):2116-2121. doi: 10.1038/s41433-021-01810-9. Epub 2021 Oct 22. PMID: 34686778; PMCID: PMC9581890. | Eye (Lond). 2022 Nov;36(11):2116-2121 | Dhillon N, Ghazal D, Harcourt J, Kumarasamy M | <p>The waiting time was significantly reduced, by 30 weeks, for one-stop patients. Approximately one quarter of referrals were deemed suitable for a one-stop service. Many more patients may have been suitable for same day surgery but there was not sufficient information in their referrals to determine their suitability.</p> | <p>This study evaluates the effectiveness of a one-stop cataract surgery service at an NHS trust and highlighted the importance of primary care optometry is identifying appropriate patients for a one-stop pathway. Primary care optometrists refined cataract referrals and streamlined the consenting process. Of 300 consecutive cataract referrals, 24% were deemed suitable for same-day surgery based on the documentation of clinical findings. After a telephone consultation, 54 suitable patients proceeded with the service, and 51 attended for surgery, achieving a 100% conversion rate with no intraoperative complications.</p> <p>The one-stop service led to a significant reduction in waiting times, cutting them by 30 weeks. However, many referrals lacked enough information to determine suitability, suggesting room for improvement in referral quality. The study highlights the potential for increased efficiency and reduced waiting times with further refinement of the referral process. This service in Scotland utilised a code for GOS, with additional funding to allow delivery of enhanced cataract referral and counselling.</p> <p>This process reduced total appointments from 5 to 1 and the benefit to patients travelling long distances was noted.</p> |

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| <p><u>Community optometrist-led post-operative cataract care: how many patients re-present to the hospital ophthalmic department?</u></p> | <p>O'Regan A, McGlacken-Byrne A, Chetty S, Mullaney P. Community optometrist-led post-operative cataract care: how many patients re-present to the hospital ophthalmic department? Ir J Med Sci. 2021 Nov;190(4):1613-1617. doi: 10.1007/s11845-021-02514-5. Epub 2021 Jan 25. PMID: 33495971; PMCID: PMC7832417.</p> | <p>Ir J Med Sci. 2021 Nov;190(4):1613-1617</p> | <p>O'Regan A, McGlacken-Byrne A, Chetty S, Mullaney P</p> | <p>Community optometrist-led post-operative care for uncomplicated patients is an effective way of reducing the workload associated with cataract surgery. Re-referral pathways must be in place to facilitate timely management of post-operative complications.</p> | <p>The study evaluates the impact of a shared-care pathway for cataract surgery, where post-operative care is provided by primary care optometrists rather than within secondary care setting for appropriate routine cases. This model significantly reduces the workload on secondary care which is of ever growing importance due to the increasing demand for cataract surgery. Over a 3 month period, 394 cataract procedures were conducted, with 93.6% of patients discharged to optometrists for post-operative follow-up. Most patients (89.7%) did not require further hospital visits, demonstrating the effectiveness of optometrist-led care for uncomplicated cases.</p> <p>However, some patients (10.3%) were re-referred to the hospital due to post-operative complications, such as uveitis, cystoid macular oedema, or retinal detachment. Notably, 55% of those re-referred had complications that required intervention, highlighting the importance of post-operative review by qualified professionals. This emphasizes the need for robust referral pathways between primary care optometrists and hospital ophthalmologists to ensure timely management of any issues.</p> <p>Digital tools, like electronic patient records (EPR), play a key role in facilitating the shared-care model, enabling smooth communication between primary and secondary care and ensuring all relevant information is accessible for follow-up care and urgent re-referrals if complications arise. This digital integration also supports the documentation of post-operative findings, allowing for continuous monitoring of patient progress.</p> |
| <p><u>Refractive stability following uncomplicated cataract surgery</u></p> | <p>McNamara P, Hutchinson I, Thornell E, Batterham M, Iloski V, Agarwal S. Refractive stability following uncomplicated cataract surgery. Clin Exp Optom. 2019 Mar;102(2):154-159. doi: 10.1111/cxo.12837. Epub 2018 Oct 31. PMID: 30380588.</p> | <p>Clin Exp Optom. 2019 Mar;102(2):154-159</p> | <p>Mc Namara P, Hutchinson I, Thornell E, Batterham M, Iloski V and Agarwal S</p> | <p>Aim: to confirm refractive stabilisation time to form basis for suggesting appropriate timeframe for spectacle prescription. Conclusion: All measured visual and ocular parameters stable from two weeks post-op following uncomplicated cataract surgery.</p> | |

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| <u>Changing trends in postoperative cataract care: impact of electronic patient records in optometrist-delivered shared care</u> | Mongan AM, Kerins F, McKenna B, Quinn SM, Mullaney P. Changing trends in postoperative cataract care: impact of electronic patient records in optometrist-delivered shared care. Ir J Med Sci. 2018 May;187(2):529-535. doi: 10.1007/s11845-017-1694-9. Epub 2017 Oct 23. PMID: 29063356. | Ir J Med Sci. 2018 May;187(2):529-535 | Mongan AM, Kerins F, McKenna B, Quinn SM, Mullaney P | Optometrists provided an excellent postoperative care service with superior postoperative feedback rates compared to hospital doctors. EPRs (Electronic Patient Records) facilitate a postoperative shared-care pathway that is of high quality and efficiency with major economic advantages. | |
| <u>Quality indicators in a community optometrist led cataract shared care scheme.</u> | Bowes OMB, Shah P, Rana M, Farrell S, Rajan MS. Quality indicators in a community optometrist led cataract shared care scheme. Ophthalmic Physiol Opt. 2018 Mar;38(2):183-192. doi: 10.1111/opo.12444. Epub 2018 Feb 5. PMID: 29405327. | Ophthalmic Physiol Opt 2018; 38: 183–192. | Bowes OMB, Shah P, Rana M, Farrell S & Rajan MS | 71% sent to Optometry for post-op Conclusion: Direct cataract referrals from accredited community optometrists led to a majority of patients receiving a definitive clinical decision during first consultation. Postoperative community follow up reduced hospital visits and allowed for convenient consultation closer to home following uncomplicated cataract surgery. A service-level agreement with an accreditation scheme measured against KPIs enhances the accountability of stakeholders involved in the cataract shared care scheme | |

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| <u>Effectiveness of UK optometric enhanced eye care services: a realist review of the literature</u> | 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 Sep;36(5):545-57. doi: 10.1111/opo.12312. PMID: 27580754. | Ophthalmic Physiol Opt. 2016 Sep;36(5):545-57 | Baker H, Ratnarajan G, Harper RA, Edgar DF, Lawrenson JG | The EOS reviewed are clinically effective and provide patient satisfaction but limited data is available on cost-effectiveness. | <p>This study highlights the importance of strong partnerships between primary care optometry and secondary care in delivering a successful Enhanced Optometric Service (EOS), covering cataract, glaucoma and minor eye conditions.</p> <p>Direct referral services offer several benefits including, a high percentage of referred patients being listed for surgery, a reduction in inappropriate referrals compared to GP led referrals, a streamlined patient journey with shorter waiting times, and reduced GP workload by bypassing them in the referral process. Referral documentation was also found to be reliable, with optometrists referrals providing better information on objective visual loss, while GP referrals contained more detailed medical and drug history. Surgical outcomes from direct referrals were comparable to other referral routes.</p> <p>The Huntingdon Direct Referral Scheme is considered an exemplar model, with 2 surveys over 5 years reporting 98% patient satisfaction. This scheme is recognised for its rigorous training and accreditation, strong collaboration between healthcare professionals, and consistently high patient satisfaction.</p> |
| <u>Cambridgeshire cataract shared care model: community optometrist-delivered postoperative discharge scheme</u> | Voyatzis G, Roberts HW, Keenan J, Rajan MS. Cambridgeshire cataract shared care model: community optometrist-delivered postoperative discharge scheme. Br J Ophthalmol. 2014 Jun;98(6):760-4. doi: 10.1136/bjophthalmol-2013-304636. Epub 2014 Feb 10. PMID: 24515987. | Br J Ophthalmol. 2014 Jun;98(6):760-4 | Voyatzis G, Roberts HW, Keenan J, Rajan MS | Postcataract surgery follow-up by community optometrists provides the advantages of care closer to home and avoids unnecessary hospital visits for patients undergoing uncomplicated cataract surgery. | <p>In Cambridgeshire, the postoperative cataract service pathway was redesigned to provide cataract surgery follow-up in the primary care by utilising the established skills of primary care-based optometrists with specific training, accreditation and provision for feedback under a service level agreement (SLA). Safety mechanisms within the pathway included dedicated phone and fax line for primary care optometrists to rapidly re-refer patients requiring hospital postoperative review and the contact details were distributed to all patients so that they may contact the department regarding any concerns or queries in the interim.</p> <p>By implementing the scheme, the hospital's cataract service aimed to improve patient convenience and make more efficient use of secondary care resources of the HES. The scheme resulted in 1449 few post operative follow up appointments at HES over a 23 month period, equating to significant cost savings to the HES resources that could be redirected to attend to patients with other ophthalmic pathology or indeed new cataract referrals. In summary, the study shows that the shared care scheme involving community optometrists is effective in the postoperative follow-up of patients undergoing routine cataract surgery, offering patient convenience and reducing unnecessary hospital visits with care delivered closer to home. An SLA between the PCT, HES and primary care optometrists incorporating training, accreditation and remuneration for feedback, increases accountability for efficient running of cataract shared care schemes in the NHS.</p> <p>Please note full article requires a subscription.</p> |

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| <u>Evaluation of a new cataract surgery referral pathway</u> | Park, J., Ross, A., Tole, D. et al. Evaluation of a new cataract surgery referral pathway. Eye 23, 309–313 (2009). https://doi.org/10.1038/sj.eye.6703075 | Eye (2009) 23, 309–313 | Park, J., Ross, A., Tole, D. et al | Optometry referrals were more likely to contain information relating to objective visual loss (100% vs 87% and listing rates were higher for optometry referrals (87% vs 69%) Conclusions: Optometric direct cataract referrals provide better information on objectively measured vision and better delivery of preoperative counselling. Traditional GP referrals contain better medical history, drug information, and details of personal circumstances. Rates of surgery were slightly higher with optometric referrals. | |
| <u>Referrals to ophthalmology: optometric and general practice comparison</u> | Pierscionek TJ, Moore JE, Pierscionek BK. Referrals to ophthalmology: optometric and general practice comparison. Ophthalmic Physiol Opt. 2009 Jan;29(1):32-40. doi: 10.1111/j.1475-1313.2008.00614.x . PMID: 19154278. | Ophthalmic Physiol Opt. 2009 Jan;29(1):32-40 | Pierscionek TJ, Moore JE, Pierscionek BK. | The differences between the two primary care practitioner groups may reflect variations in training, skills and practice. Further investigation of the particular strengths of both groups, and how they can be optimised to promote effective shared care, is required. | <p>This paper compares the referrals from optometry practices and general practice to ophthalmology. The difference in reason for referral and how closely matched with ophthalmological diagnosis.</p> <p>The study shows that GPs referred predominantly with external eye conditions and optometrists patients with cataracts. Both groups show good agreement with respective ophthalmological diagnosis. The differences in referral accuracy may be attributed to variations in training, equipment and time available for examinations. The study suggests that shared care between general practitioners and optometrists could improve referral accuracy and patient outcomes.</p> <p>Please note the full article requires a subscription.</p> |

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| <u>Optometrist referrals for cataract and "Action on Cataracts" guidelines: are optometrists following them and are they effective?</u> | Lash SC, Prendiville CP, Samson A, Lewis K, Munneke R, Parkin BT. Optometrist referrals for cataract and "Action on Cataracts" guidelines: are optometrists following them and are they effective? Ophthalmic Physiol Opt. 2006 Sep;26(5):464-7. doi: 10.1111/j.1475-1313.2006.00408.x. PMID: 16918770. | Ophthal. Physiol. Opt. 2006 26: 464–467 | Lash SC, Prendiville CP, Samson A, Lewis K, Munneke R, Parkin BT | Conclusion: We recommend that all referrals for cataract should confirm a detrimental effect on lifestyle and the patient's willingness for surgery, in addition to confirming cataract as the main cause of visual loss. | |
| <u>Cataract surgery and the optometrist</u> | Muthucumarana DJ, Rimmer TJ. Cataract surgery and the optometrist. Eye (Lond). 2000 Oct;14 Pt 5:777-8. doi: 10.1038/eye.2000.203. PMID: 11116704. | Eye (Lond) . 2000 Oct;14 Pt 5:777-8 Eye (2000) 14, 777-778 | Muthucumarana DJ, Rimmer TJ | Conclusion Patients without complications can be discharged to the care of their optometrist on the first day following cataract surgery. With good communication between hospital and the optometrist, better use can be made of available resources. In 23% of cases there was no feedback, which demonstrates the problem of trying to base a service on goodwill rather than fees and contracts. | |

LOCSU Cataract Case Studies

| Title and link | Summary |
|---|---|
| <p><u>Postoperative Cataract Care – Independent Sector Provider of NHS Cataract Surgery Collaboration with Primary Care Optometry</u></p> | <p>Demand for cataract surgery is increasing year on year and is predicted to rise by over 20% in the next 10 years. This has been further exacerbated by impact of the COVID-19 pandemic on the waiting lists and capacity.</p> <p>To date there been over 15,000 post-operative assessments carried out in primary care via the arrangement outlined in this study.</p> <p>The service ensures that patients are seen in a convenient location, by a suitably qualified professional with full outcome data reporting including reporting of NOD data set as recommended by NICE NG 775. This enables capacity to be released in other parts of the system whilst keeping patient safety and quality at the centre of provision.</p> <p>15,000 hospital appointments avoided so far and the potential to increase capacity by 3,000 new patient appointments per annum working at 80% discharge across the 6 hospitals.</p> |
| <p><u>The Role of the Optometrist in Cataract Care</u></p> | <p>Traditional care models are hospital based and rely heavily on consultant teams. The cataract service in Manchester is a fantastic example of collaboration across primary and secondary care. The use of optometrists across the entire pathway leads to excellent delivery of care with more appropriate use of hospital appointments and shorter waiting lists for those who do require specialised care. The pre cataract service ensures resources are being used correctly and less appointments are required in secondary care. The improved conversion to surgery saves hospital appointment time, with the added benefit of fewer unnecessary journeys and decreased CO2 emissions. Manchester is set to have a clean air bill, so it is excellent to see the Optical sector support this. Optometrists in both HES and primary care settings deliver excellent cataract care which is safe and well received by patients. The use of a cataract hub allows high volume low complexity surgeries to be performed and this is supported by the specialist optometrist cataract team as well as primary care optometrists for follow up. The patient is at the forefront of this pathway with care delivered at a convenient time closer to home without detriment to the quality received.</p> |
| <p><u>Mid Yorkshire Trust in Wakefield – One of the Earliest To Implement a Postoperative-Cataract Service in Conjunction With Wakefield LOC</u></p> | <p>Demand for ophthalmology services was high. Cataract patients routinely attended three hospital appointments postoperatively. Optometrists, with their core competency skills can safely and effectively deliver high quality of care to their patients and ensure only those who need to be seen by an ophthalmologist, are referred back to the hospital. Engaging with the local trust and commissioners to ensure their skills are recognised has resulted in increased satisfaction amongst optometrists. At the same time, this has improved patient satisfaction and allowed adequate clinic capacity for the increasing number of patients requiring cataract surgery.</p> |

For further information or if
you have any questions, please email
info@locsus.co.uk