Evidence Brief: Ophthalmology

Contents

Produced by the Knowledge Management team Evidence Briefs offer an overview of the published reports, research, and evidence on a workforce-related topic.

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Key publications – the big picture

Fit for the future: 10 Year Health Plan for England (accessible version)
Department for Health and Social Care, July 2025
This is a plan to create a new model of care, fit for the future. It will be central to how we deliver on our health mission. We will take the NHS's founding principles - universal care, free at the point of delivery, based on need and funded through general taxation - and from those foundations, entirely reimagine how the NHS does care so patients have real choice and control over their health and care.

A strain on sight: Waiting for NHS specialist eye care
HealthWatch, March 2025
Our research reveals strong public support for greater use of staff in high street opticians, as people bear the brunt of long waiting times for specialist eye care.
We are calling for optician services, including optometrists, to have more responsibility for managing people's eye care and referring them on for specialist treatment to help cut waiting times. Additionally, actions such as those proposed in the Optometry First model are needed to improve communications and support for people waiting for eye care.

New UK Eye Care Data Hub predicts higher prevalence of eye disease and eye care workforce
The Royal College of Ophthalmologists, January 2025
Eye disease is a major contributor to national health service backlogs, and the number of cases is set to significantly increase with an ageing population. The College has collaborated with organisations from across the UK's eye care sector, led by The College of Optometrists, to launch the new UK Eye Care Data Hub to support health care commissioners and providers plan and design future eye care services.
The new data tool forecasts the number of people expected to have a wide range of eye diseases and conditions and models the future eye care workforce, by UK nation and region, over the next 15 years.

Key Interventions to Transform Eye Care & Eye Health
PA Consulting, October 2024
The Association of Optometrists, Fight for Sight, Primary Eye Care Services and Roche Products Ltd have collectively commissioned PA Consulting to review eye care services and eye health in the UK and to build an economic model and report to demonstrate areas where investment and savings may improve the eye care system.

Workforce: Prevalence of eye conditions
The Royal College of Ophthalmologists, September 2024
This document collates best available data on incidence and prevalence for over 250 eye conditions, grouped by subspeciality.
Estimates for the number of required attendances for each condition, and the composition of the optimum multi-disciplinary workforce are also included.

Out of Sight: The hidden impact of the outsourcing of NHS cataract care on eye care departments in NHS Trusts
Centre for Health and the Public Interest, July 2024
This report sets out detailed research into the impact of the use of the private sector to deliver NHS funded cataract services. As we have documented in our previous report on this subject, over the past 5 years there has been a significant increase in the amount of the NHS eye care budget which has been spent on cataract surgery, with a large proportion of this being used to purchase operations on behalf of NHS patients from private companies.

NHS Long Term Workforce Plan
NHS England, June 2023
The first comprehensive workforce plan for the NHS, putting staffing on a sustainable footing and improving patient care. It focuses on retaining existing talent and making the best use of new technology alongside the biggest recruitment drive in health service history.

Census report: Facing workforce shortages and backlogs in the aftermath of Covid-19: the 2022 census of the ophthalmology consultant, trainee and SAS workforce
The Royal College of Ophthalmologists, March 2023
The Royal College of Ophthalmologists (RCOphth) has today published the results of its 2022 workforce census, highlighting the scale of staff shortages in NHS ophthalmology services and how they will continue to worsen over the coming years without immediate action. The report also finds increasing concerns regarding the impact of independent sector providers (private companies undertaking NHS-funded services) delivering NHS ophthalmology care.

The future of primary eye care – principles and priorities
FODO – The Association of Eye Care Providers, 2023
Recognising that primary eye care in the UK is one of the world's most advanced eye care services, principles and priorities for primary eye care calls for more to be done to ensure patients can access the right care in the right place at the right time to tackle avoidable sight loss.

Written evidence submitted by the Royal College of Ophthalmologists
Parliament UK, January 2022
Written evidence highlights increased training places, upskilling, staff retention and training curricula.

East of England Eyecare Workforce Transformation through increasing capacity and capability, integrating advancing practice initiatives and the Ophthalmic Practitioner Training programme (OPT) Phase 1: Final Report
Health Education England and University of East Anglia, 26 October 2022
A three phased project aims to address the integration of eyecare workforce development within wider initiatives (across population groups/specialties) and strengthen workforce capability and capacity to deliver eyecare on a whole-system basis across East of England. 1.2. Phase 1 aimed to 1) build the foundation for growing capability and capability of the whole workforce across different contexts to meet the needs of people with actual/potential eye conditions to optimise existing workforce ‘assets’, while taking a supportive approach to identifying and addressing learning needs and 2) make recommendations for Health Education England (Eastern); Integrated Care Systems (ICSs) and Higher Education Institutes (HEIs) to inform subsequent stages.

Cataract workforce calculator tool
The Royal College of Ophthalmologists, March 2021
The workforce calculator tool has been designed to predict the staffing requirements for different patient pathways to serve the local population needs. It provides detail on number of surgical lists, and the total annual and weekly ophthalmologist sessions needed, taking into account the primary eye care workforce.

We are the NHS: People Plan 2020/21 – action for us all
NHS, July 2020
Our NHS is made up of 1.3 million people who care for the people of this country with skill, compassion and dedication. Action from the Interim People Plan was already being taken to increase the support and recognition for our people. Then the start of COVID-19 changed everything. Colleagues and loved

ones were lost, and our people gave more of themselves than ever before. The public responded with appreciation and warmth. The clapping has now stopped, but our people must remain at the heart of our NHS, and the nation, as we rebuild.

Ophthalmology GIRFT Programme National Specialty Report
Getting It Right First Time (GIRFT), December 2019
The ophthalmology national report from the Getting It Right First Time (GIRFT) programme features 22 recommendations to improve units treating the major sight-threatening conditions, including cataract, glaucoma, wet age-related macular degeneration (wet AMD) and diabetic retinopathy.
See p. 57 “Workforce and workspace”

The NHS Long Term Plan
NHS, Updated August 2019
The NHS Long Term Plan was developed in partnership with those who know the NHS best – frontline health and care staff, patients and their families and other experts.

Primary eye care, community ophthalmology and general ophthalmology
The Royal College of Ophthalmologists and the College of Optometrists, February 2019
This document concentrates on the commissioning and provision of eye health and ophthalmology services in England. It is intended to provide an overview of what should be in place across the eye health service system. Ophthalmology accounts for 8% of the 94 million hospital outpatient attendances and is the busiest outpatient attendance specialty.1 With demand already overwhelming many hospital eye services (HES), addressing the challenge of an ageing population and delivering new treatments is a problem for which we must find a solution. More innovative approaches for the management of acute and chronic eye disease are necessary to provide safe and sustainable services.

Handbook: Transforming elective care services ophthalmology
NHS England, January 2019
This handbook has been created to support the improvement of local health and care systems for ophthalmology elective care services.

Case Studies

Pioneering high-volume bilateral cataract surgery in Tayside
The Royal College of Ophthalmologists
Since February 2022, Ninewells Hospital in Dundee, Tayside, has been delivering a high-volume immediate sequential bilateral cataract surgery (ISBCS) model to address long waiting times from referral to assessment and rising demand for services. Patients undergo surgery on both eyes during a single hospital visit, reducing hospital attendances and overall recovery periods. Direct listing from optometry referral, streamlined patient flow, and innovative surgical training approaches underpin the new pathway.

Digitising clinical pathways using online forms at Moorfields Eye Hospital - Digitally Enabled Outpatients
Futures, October 2023
Moorfields Eye Hospital is a specialist hospital in London, supporting patients with their eye health through ophthalmology pathways. The trust have adopted the use of online forms via the patient engagement portal, DrDoctor, to digitise their pathways. After success in an initial ten pathways, they are now rolling out the programme across other areas in the organisation.

Reducing waiting lists by repurposing a Nightingale hospital into a protected elective centre
NHS Confederation, March 2023
Waiting lists for some procedures in Devon have been cut by converting a Nightingale hospital into a protected elective centre delivering additional orthopaedic, ophthalmology and diagnostic activity. Cooperation between clinicians from different trusts has resulted in innovative ways of working. The Devon integrated care system has worked with local trusts – principally the Royal Devon University Health Foundation Trust but also Torbay and South Devon Foundation Trust and University Hospitals Plymouth Trust – to deliver the extra capacity.

Rapid deployment of ophthalmology video consultations at Moorfields Eye Hospital
NHS England, January 2022
Moorfields Eye Hospital NHS Foundation Trust is one of the largest providers of ophthalmology services in Europe. Between 2018 and 2019, the trust handled early 800,000 patient encounters, resulting in around 100,000 patients attending its main accident and emergency (A&E) department or an emergency satellite clinic.
The COVID-19 pandemic and subsequent UK lockdown in March 2020 created two immediate challenges for the trust: how to identify and manage the most critical emergencies while minimising hospital visits, and how to provide care to those patients for whom prolonged care disruption could lead to significant harm or loss of vision.

Optometry First Toolkit
NHS England
Eye care services in England are under pressure and must urgently innovate if they are to meet the needs of our population safely and sustainably. This is especially true for long term conditions like glaucoma where existing services are struggling to meet follow-up needs and patients are at greater risk of avoidable sight loss. Optometry First is a service commissioning and design principle to help manage this growing demand in a sustainable way by establishing a co-ordinated and comprehensive primary eye care service as part of the wider eye care delivery system, reducing pressure on the hospital eye service (HES) and benefiting patients and the wider NHS. It covers primary eye care's contribution to both recovery and the transformation of eye care services to meet need.

Case studies are included in the Getting It Right First Time Ophthalmology report

Post Covid-19 surgical ophthalmology pathway
The Academy of NHS Fab Stuff, December 2020
As a result of Covid-19 Tetbury Hospital has developed and is delivering an ophthalmology surgical pathway within current and ongoing Covid-19 guidelines. We are able to continue to deliver an efficient and effective and safe surgical pathway for patients.

Eye Clinic Liaison Officer service continues to help patients across the Bay
The Academy of NHS Fab Stuff, June 2020
A cross-bay service is continuing to support people in Lancaster, Barrow and Kendal, with eye conditions during the coronavirus (COVID-19) pandemic. The Eye Clinic Liaison Officer (ECLO) service is based in the Macular Clinic at Westmorland General Hospital and also offers a service at Furness General Hospital and Royal Lancaster Infirmary. The ECLO service is still helping to support people via telephone and email whilst abiding with social distancing guidelines that have been put in place by the Government.

EyesWise
NHS England

EyesWise is the Elective Care Transformation Programme's project to save sight and improve people's lives, in collaboration with the Royal College of Ophthalmologists. It aims to ensure people in England who need consultant led care get it as quickly as possible, and others are spared the need to attend specialist eye clinics. (see also Transforming elective care services ophthalmology)

The Star for workforce redesign

More resources and tools are available in the Star

Statistics

You can find relevant statistics on the Health and Care Statistics Landscape under **"Health and Care"** and use the **"Ophthalmology"** filter

General Ophthalmic Services Workforce Statistics
NHS Digital
In December 2019 we advised users of this publication series that the data source for this series of Official Statistics was being withdrawn and that the publication in 2020 (for the 2019 calendar year) would be the last release using the original data source. We committed to investigating suitable alternative data sources to ascertain whether it would be possible to continue the series. However, no suitable data source is available to us and as a result, we are unable to continue the series.

National Data Programme

Workforce, Training and Education staff can look at the National Data Warehouse (NDL) SharePoint site to find out more about datasets and Tableau products.

Published Peer Reviewed Research

Burnout

A qualitative analysis of strategies for managing work-related stress among optometrists in the United Kingdom
Optometry and Vision Science, 2025
SIGNIFICANCE: Work-related stress is common in the optometry profession, yet there is limited research on how optometrists and organizations manage and mitigate these issues. This study explores strategies to reduce work-related stress and provides recommendations for individuals, employers, and the profession, to inform future support and guidance. PURPOSE: To explore how optometrists self-manage work-related stress and to identify potential strategies that employers can implement to minimize stress and foster a supportive and positive work environment.

An eye center-wide burnout intervention: resilience program and burnout survey
Digital Journal of Ophthalmology 25(1), 2019
Purpose: Burnout affects half of doctors in the United States. Programs to decrease burnout and foster resilience are needed to prevent loss of doctors in the workforce and maintain quality care. To ameliorate burnout at our eye center, we developed a resilience program and used a survey to identify additional groups with higher burnout for future interventions. […] Results:

A total of 593 individuals were invited to participate, of whom 252 completed the survey. Overall, 37% of the respondents reported being emotionally exhausted, and 17% had experienced depersonalization. With regard to work-life balance, 43% of the respondents were satisfied and 34% were dissatisfied. Burnout was higher in respondents who participated in clinical care (P = 0.001), particularly among ophthalmic technicians (P = 0.044). Feedback from the doctors participating in the "Doctors Lounge" suggested perceived benefits, including enhanced collegiality, life skills, and improved self-management. Conclusions: Our baseline burnout survey showed higher burnout in our clinical workers, particularly in our ophthalmic technicians. Planning for next year will include the providers identified in the survey.

Career Pathways

Factors associated with resident pursuit of pediatric ophthalmology fellowship
Journal of AAPOS, 2025
BACKGROUND: The current shortage of pediatric ophthalmologists leaves many children without access to timely care. Almost half of pediatric ophthalmology fellowship positions go unfilled annually. The purpose of this study was to investigate residency factors associated with pursuit of a fellowship in pediatric ophthalmology.

Alternative career paths for ophthalmologists Abstract only*
Current Opinion in Ophthalmology 34(5), 2023
PURPOSE: Traditionally, ophthalmologists complete training and then choose a clinical care setting. The skills required to become an ophthalmologist can be applied to a variety of alternative career paths within and beyond healthcare. Not unexpectedly, therefore, there is a growing trend for ophthalmologists to explore alternative career paths in both healthcare and the life science industry more broadly. In this invited editorial, we summarize the more commonly considered 'alternative career paths,' and provide personal perspectives that have helped us and others when weighing such options.

Identification of Factors that May Predict Career Trajectory Among Neuro-Ophthalmology Fellows
Journal of Neuro-Ophthalmology 43(3), 2023
BACKGROUND: There is modest literature regarding fellowship applicant factors that may predict future career achievement. We aim to characterize neuro-ophthalmology fellows and identify and analyze characteristics that may predict future career trajectory.

Factors Influencing Career Decisions and Satisfaction Among Newly Practicing Ophthalmologists
American Journal of Ophthalmology 234, 2022
PURPOSE: To describe the career choices of newly practicing ophthalmologists and explore factors influencing career decisions and satisfaction.

Predictors of ophthalmology career success (POCS) study
BMJ Open Ophthalmology 6(1), 2021
OBJECTIVE: Ophthalmology is the busiest outpatient specialty with demand predicted to rise over 40% in the next 20 years. A significant increase in the number of trainee ophthalmologists is required to fill currently vacant consultant posts and meet the UK's workforce demands by 2038. Our aim was to understand what determines success in ophthalmology training, in order to inform future ophthalmologists, refine recruitment and facilitate workforce planning.

Covid-19

Evaluation of the Manchester COVID-19 Urgent Eyecare Service (CUES)

Eye 36(4), 2021
INTRODUCTION: Pressure on capacity in ophthalmology alongside the coronavirus (COVID-19) pandemic led to the development of the COVID-19 Urgent Eyecare Service (CUES), allowing patients to receive a prompt ophthalmic consultation, including remotely. The aim of this study was to conduct a service evaluation of CUES in Manchester.

Digital health during COVID-19: lessons from operationalising new models of care in ophthalmology
The Lancet.Digital Health 3(2), 2021
Abstract: The COVID-19 pandemic has resulted in massive disruptions within health care, both directly as a result of the infectious disease outbreak, and indirectly because of public health measures to mitigate against transmission. This disruption has caused rapid dynamic fluctuations in demand, capacity, and even contextual aspects of health care. Therefore, the traditional face-to-face patient-physician care model has had to be re-examined in many countries, with digital technology and new models of care being rapidly deployed to meet the various challenges of the pandemic. This Viewpoint highlights new models in ophthalmology that have adapted to incorporate digital health solutions such as telehealth, artificial intelligence decision support for triaging and clinical care, and home monitoring. These models can be operationalised for different clinical applications based on the technology, clinical need, demand from patients, and manpower availability, ranging from out-of-hospital models including the hub-and-spoke pre-hospital model, to front-line models such as the inflow funnel model and monitoring models such as the so-called lighthouse model for provider-led monitoring. Lessons learnt from operationalising these models for ophthalmology in the context of COVID-19 are discussed, along with their relevance for other specialty domains.

The Role and Views of Ophthalmologists During the COVID-19 Pandemic
Clinical Ophthalmology 15, 2021
PURPOSE: The severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) pandemic forced ophthalmologists to adjust their working conditions to ensure patient and staff safety, while still providing effective and timely treatment. This international survey among ophthalmologists was initiated to capture what actions ophthalmologists were taking and what their opinions were on the risks of infection in their workplace, the delay in treatment, the use of telemedicine and telephone for appointments, and the regional specifications and measures implemented by the respective authorities.

Redeployment of ophthalmologists in the United Kingdom during the Coronavirus Disease Pandemic
European Journal of Ophthalmology 31(5), 2021
BACKGROUND: During the current coronavirus (COVID-19) pandemic, some ophthalmologists across the United Kingdom (UK) have been redeployed to areas of need across the National Health Service (NHS). This survey was performed to assess aspects of this process including training & education, tasks expected, availability of personal protection equipment (PPE) used and the overall anxiety of ophthalmologists around their redeployment.

Prevalence of SARS-CoV-2 amongst ophthalmologists throughout the first and second waves of the pandemic
Medicine 100(50), 2021
The study aims to investigate the prevalence of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection among ophthalmology unit staff throughout the first and second waves of the outbreak, in order to verify the effectiveness of the measures adopted in containing the contagion.

COVID-19 and its effect on the provision of ophthalmic care in the United Kingdom
International Journal of Clinical Practice 75(7), 2021
The first quarter of 2020 gave light to a novel virus, Coronavirus 2019 (COVID-19), causing a pandemic of unbridled proportions. The National Health Service in the United Kingdom issued guidance to ensure that capacity was increased in acute medical settings, to prepare for the surge of COVID-19 cases. The Royal College of Ophthalmologists followed suit with guidance on the curtailment of all elective activity, aimed at protecting both patients and staff. Ophthalmology is one of the busiest outpatient specialities, and risk stratification of patients with appointments cancelled or on review lists was paramount to ensure there was no serious, permanent harm to sight. Our way of working, as we knew it, had to change in a short period of time. Local emergency eye care was changed from a walk in service, with the implementation of a strict triage protocol. Ophthalmologists, as well as Otorhinolaryngology colleagues, were identified as being at high risk of infection, due to the close proximity of clinical examination. The redesign of clinical areas to allow for social distancing, slit lamp barriers and personal protective equipment was all implemented. This time of relative pause has provided the opportunity to harness new ways of working, including the streamlining of services, reduction of backlog and the incorporation of telemedicine. Health preparedness is a new lexicon to Ophthalmology departments across the world, and it will now have to be stringently implemented in the ophthalmic setting.

When ophthalmologists step up to the COVID-19 frontlines
Eye 34, 2020
Drawing from experiences from the 2003 severe acute respiratory syndrome (SARS) outbreak in Singapore, the National Centre for Infectious Disease (NCID), a 330-bed capacity national facility was set up to handle infectious disease outbreaks. During such an outbreak, physicians and anaesthetists are critically needed in the outbreak wards and intensive care units. Ophthalmologists can contribute meaningfully during such times too. Since 31st January 2020, ophthalmologists, together with various surgical disciplines, augmented the staffing levels of NCID, the main centre where COVID-19 suspects were screened and treated. The role was to run the screening centre (SC), where suspect cases were screened. As of 31st March 2020, 51 ophthalmologists of all ranks (Medical Officers to Consultants) had been deployed to the SC safely. Recognising that age and co-morbidities result in less favourable outcomes in COVID-19 patients, those of age >60 years old and/or with cardiovascular risk factors [1] were excluded from deployment.

Could telehealth help eye care practitioners adapt contact lens services during the COVID-19 pandemic?
Contact lens & Anterior Eye 43, 2020
The COVID-19 pandemic has necessitated government-imposed restrictions on social interactions and travel. For many, the guidance has led to new ways of working, most notably a shift towards working remotely. While eye care practitioners (ECPs) may continue to provide urgent or emergency eye care, in many cases the travel restrictions present a unique challenge by preventing conventional face-to-face examination. Telephone triage provides a useful starting point for establishing at-risk and emergency patients; but patient examination is central to contact lens patient care. The indeterminate period over which conventional practice will be suspended, and the risk that resumption of 'normal' practice could be impeded by a potential secondary peak in COVID-19 cases, hastens the need for practitioners to adapt their delivery of eyecare. Specifically, it is prudent to reflect upon supportive evidence for more comprehensive approaches to teleoptometry in contact lens practice. Smartphone based ocular imaging is an area which has

seen considerable growth, particularly for imaging the posterior eye. Smartphone imaging of the anterior eye requires additional specialised instrumentation unlikely to be available to patients at home. Further, there is only limited evidence for self-administered image capture. In general, digital photographs, are useful for detection of gross anterior eye changes, but subtle changes are less discernible. For the assessment of visual acuity, many electronic test charts have been validated for use by practitioners. Research into self-administered visual acuity measures remains limited. The absence of a comprehensive evidence base for teleoptometry limits ECPs, particularly during this pandemic. Knowledge gaps ought to be addressed to facilitate development of optometry specific evidence-based guidance for telecare. In particular, advances in ocular self-imaging could help move this field forwards.

Education and training

Mentorship in surgical training; a systematic scoping review to inform a mentorship framework for ophthalmology trainees
BMC Medical Education 25(1), 2025
BACKGROUND: Mentorship plays a vital role in surgical training. In the field of ophthalmology, effective mentorship is particularly critical due to the specialised nature of surgeries and the need for comprehensive skill development. However, the landscape of mentorship remains underexplored. Understanding key characteristics and components of effective mentorship is essential for optimising training and ensuring the success of future generations of surgeons. This scoping review aims to analyse existing literature on mentorship in surgical training and to employ Levac et al.'s enhanced methodological framework to construct a conceptual framework for a bespoke mentorship programme tailored to the needs of ophthalmology trainees.

Utility of Combining a Simulation-Based Method with Lecture for Retinopathy Training in Emergency Medicine Residency
Spartan Medical Research Journal 10(1), 2025
INTRODUCTION: Funduscopic examination is a critical skill for diagnosing eye-related pathologies but has witnessed a decline in proficiency over recent decades. Simulation-based training is proposed as a solution to enhance emergency medicine residents' funduscopic examination skills. We hypothesized that a combination of lecture and simulation would improve residents' diagnostic abilities, with senior residents potentially outperforming junior counterparts.

The Development and Implementation of a Simulated Patient Resource for Teaching and Assessment in Optometry Low Vision Rehabilitation
Clinical Optometry 17, 2025
Purpose: To report on the development, evaluation, and acceptability of a simulated patient resource designed for teaching and assessment in low vision rehabilitation. The findings aim to inform possible future integration of this method into optometric education.

Involving stakeholders in designing a mental health curriculum for staff in the vision impairment sector
British Journal of Visual Impairment 43(3), 2025
Abstract: Depression and anxiety are common in people with congenital and acquired vision impairment but often go unaddressed. Staff from a variety of professions and roles in the sight impairment sector are well-placed to identify mental health issues and signpost individuals for support. However, many of these individuals need training to do this competently. The aim of this project was to develop a mental health training curriculum for staff. We used a seven-step method involving staff and service users from national sight loss charities and local authorities, and university researchers. The result was a curriculum containing

five modules covering an introduction to mental well-being, the use of a standardised depression and anxiety screening tool, referral and support options and implementation issues to consider. Future work involves developing the curriculum into an online training programme for wide dissemination across the sight loss sector.

Effectiveness of simulation models and digital alternatives in training ophthalmoscopy: A systematic review Abstract only*
Medical Teacher 47(2), 2025
PURPOSE: Traditional direct ophthalmoscopy (TDO) is the oldest method of fundus examination; however, it has fallen out of use due to its technical difficulty and limitations to clinical utility, amidst the advent of potentially better options. A spectrum of new technologies may help in addressing the shortcomings of TDO: simulation mannequins with non-tracked TDO, simulation models with tracked TDO, and smartphone ophthalmoscopy (SFO).

Analysing the effectiveness of Just-A-Minute Optometry Clinical Pearls: a micro-learning tool in continuing optometry education
Abstract only*
Clinical & Experimental Optometry 108(3), 2025
Abstract: CLINICAL RELEVANCE: Just-A-Minute Clinical Pearls as a microlearning concept may be beneficial in enhancing optometry and ophthalmology practice globally. BACKGROUND: Medical education often witnesses a gap in effectively translating the learnings into clinical practice, pointing to the complex and traditional teaching methods as hindrances. The present work studied the usefulness and acceptability of Just-A-Minute Optometry Clinical Pearls, a micro-learning tool, among optometrists and ophthalmologists.

Curcumin in Ophthalmology: Mechanisms, Challenges, and Emerging Opportunities
Molecules 30(3), 2025
Abstract: Ocular diseases affecting the anterior and posterior segments of the eye are major causes of global vision impairment. Curcumin, a natural polyphenol, exhibits anti-inflammatory, antioxidant, antibacterial, and neuroprotective properties, making it a promising candidate for ocular therapy. However, its clinical use is hindered by low aqueous solubility, poor bioavailability, and rapid systemic elimination. This review comprehensively highlights advances in curcumin delivery systems aimed at overcoming these challenges.

Ophthalmic care education and training in nursing: A scoping review
Nurse Education Today 144, 2025
BACKGROUND: Ophthalmic care is a fundamental component of patient care, encompassing a range of interventions such as basic eye hygiene and medication administration, through to advanced skills in assessment and diagnostics. AIM: To explore what is known about ophthalmic content in nurse education, training and curricula and identify advanced nursing skills necessary for competence in ophthalmic care.

Education in focus: Significant improvements in student learning and satisfaction with ophthalmology teaching delivered using a blended learning approach
PLoS ONE 19(7), 2024
PURPOSE: This study aimed to measure student satisfaction with a revised ophthalmology delivery format, which due to the pandemic had previously relied on a remote online flipped classroom (OFC) format compared to a blended learning format. This educational strategy combined online learning with in-person seminars and practical patient centred sessions. Our previous investigations demonstrated a significant lack of student satisfaction with a curriculum solely reliant on a remote OFC, as such we hypothesised that a blended learning approach would

result in improved levels of student satisfaction and knowledge gain.

The Ophthalmology Foundation launches global online examination for ophthalmologists in training
Community Eye Health Journal 37(124), 2024
The Ophthalmology Foundation has launched a groundbreaking international online examination designed for ophthalmologists in training, residents, and recently qualified ophthalmologists. Crafted to align with the highest standards and the professional requirements in the field. This initiative aims to standardize education, enhance clinical readiness, and set a high benchmark for ophthalmologists worldwide.

Leveraging ChatGPT for ophthalmic education: A critical appraisal Abstract only*
European Journal of Ophthalmology 34(2), 2024
In recent years, the advent of artificial intelligence (AI) has transformed many sectors, including medical education. This editorial critically appraises the integration of ChatGPT, a state-of-the-art AI language model, into ophthalmic education, focusing on its potential, limitations, and ethical considerations. The application of ChatGPT in teaching and training ophthalmologists presents an innovative method to offer real-time, customized learning experiences. Through a systematic analysis of both experimental and clinical data, this editorial examines how ChatGPT enhances engagement, understanding, and retention of complex ophthalmological concepts. The study also evaluates the efficacy of ChatGPT in simulating patient interactions and clinical scenarios, which can foster improved diagnostic and interpersonal skills.

Non-technical factors on ophthalmology education: a narrative review
Frontiers in Medicine 11, 2024
Ophthalmology education is increasingly influenced by non-technical factors. This paper examines the multifaceted influences on ophthalmology education, focusing on direct and indirect factors that have shaped the training and wellbeing of ophthalmology students and residents. A systematic search of PubMed and Embase was carried out, searching date was from inception to 01/07/2024.

Leadership in ophthalmology training: Opportunities and risks of medical specialist education
Ophthalmologie121, 2024
Abstract: Medical specialist training requires constant improvement and adaptation of the contents to the current situation. Nowadays, young physicians have the opportunity to select among the most renowned institutions and can choose the one most qualified for their training. Hospitals on the other hand still have the desire to recruit highly qualified physicians for their resident programs, which requires a good, well-rounded and reliable offer by the department under good leadership. Thus, among other issues a modern and multilingual homepage is already an important instrument for successfully addressing applicants and winning them over for the department. In addition to a well-planned and structured training plan (e.g., the "Homburg Curriculum") and a so-called "resident guide", many other additional offers are nowadays part of a successful training, such as structured internal and external specialist training courses, well thought out research concepts available to all interested parties, wet labs for practical exercises on pig's eyes and as the latest most innovative addition, a virtual reality simulator. Due to a structured curriculum with regular continuous education during the daily early morning meetings and an exchange program with another university eye hospital, not only the residents can benefit but ultimately also the department itself. In addition, future specialists are involved in the respective organization (so-called "service teams") from the very beginning.

This conveys a great deal of knowledge and expertise but also organizational skills and thus improves the quality of training. In any case, standardized residency training with a view beyond the horizon, which is transparently organized and reliably carried out, improves the quality of training in order to become a certified ophthalmologist and increases the satisfaction of the residents. A department which is committed and can offer a wide range of services will benefit from motivated and satisfied employees in a good interpersonal climate, which in the end benefits not only the team but also the patients.

Beyond the 'big smoke': Enabling supervision of ophthalmology trainees in regional, rural and remote Australia
The Australian Journal of Rural Health 31(3), 2023
OBJECTIVE: Expansion of opportunities for ophthalmology training beyond the 'big smoke' is anticipated to support the future distribution of ophthalmologists in regional, rural and remote areas of Australia. However, little is known about what enables supervision outside of metropolitan tertiary hospital settings that would contribute to positive training experiences for specialist medical trainees and encourage them to leave the 'big smoke' once qualified. The aim of this study was therefore to explore the perceived enablers of ophthalmology trainee supervision in regional, rural and remote health settings across Australia.

Ophthalmology in England: how is training geared to supply our future workforce? Full text available with NHS OpenAthens account*
Eye 37(10), 2023
Training in ophthalmology is currently a 7-year postgraduate run-through programme, where doctors with a full GMC registration are taken through a curriculum to qualify as a consultant ophthalmologist. Understanding their profile, numbers and distribution provides an insight into the state of the ophthalmology workforce at present and into the future.

Benefits and challenges to ophthalmology training via the Specialist Training Program
The Australian Journal of Rural Health 31(2), 2022
Abstract: INTRODUCTION: The Specialist Training Program (STP) is a commonwealth funding initiative to support specialist medical training positions in regional, rural and remote areas, and in private settings. The program helps to improve the skills and distribution of the specialist medical workforce by providing trainees experience of a broader range of healthcare settings., OBJECTIVE: To examine the benefits and challenges of ophthalmology training delivered by the STP in regional, rural, remote, and/or private settings across Australia.

Student perspectives of extended clinical placements in optometry: a qualitative study
BMC Medical Education 22(1), 2022
BACKGROUND: The number of students enrolled in health courses at Australian universities is rising, increasing demand for clinical placements. Optometry students have historically undertaken clinical training in short-block rotations at university-led teaching clinics in metropolitan locations. This is changing, with some optometry programs adopting extended placements. These placements are conducted in community-based practices, with many incorporating a rural component to the training. This study explored factors which influence placement success and satisfaction from the perspective of optometry students.

Ophthalmology Education Leadership Attitudes Toward Mentorship of Female Medical Students Abstract only*
American Journal of Ophthalmology 243, 2022
PURPOSE: Numerous studies have emphasized the influence of gender-specific mentors in medical students' career decisions,

but this has not been explored fully in ophthalmology. Therefore, this study evaluated ophthalmology educators' attitudes toward female mentorship, to better understand how this may relate to medical students' career development and training.

Delivering a modified continuous objective structured clinical examination for ophthalmology residents through a hybrid online method
Korean Journal of Medical Education 33(4), 2021
Abstract: Since coronavirus disease 2019 was declared a global pandemic by the World Health Organization, it has become a challenging situation to continue medical education, including in Indonesia. The situation prohibited face-to-face (direct) educational activities in clinical settings, therefore also postponing examinations involving especially procedural skills. Adaptations were urgently needed to maintain the delivery of high-stake examinations to sustain the number of ophthalmology graduates and the continuation of eye health service. Objective structured clinical examination (OSCE) has been one of our widely used method to assess clinical competencies for ophthalmology residents, and is the one method that involves gatherings, close contact of examiners, examinees and patients, therefore the most difficult to adjust. Pandemic challenges brought technical changes in our delivering the OSCE to online, maximizing digital platforms of meetings, while still concerned to guarding the safety of candidates, patients and staffs. OSCE scenarios were also made as timely efficient as possible by changing continuous station models to a cascade one. The purpose of this article is to document our experience in conducting a feasible and reproducible OSCE in this pandemic era filled with limitations.

A systematic review of simulation-based training tools for technical and non-technical skills in ophthalmology
Eye 34(10), 2020
Publication date: March 2020
To evaluate all simulation models for ophthalmology technical and non-technical skills training and the strength of evidence to support their validity and effectiveness. A systematic search was performed using PubMed and Embase for studies published from inception to 01/07/2019. Studies were analysed according to the training modality: virtual reality; wet-lab; dry-lab models; e-learning. The educational impact of studies was evaluated using Messick's validity framework and McGaghie's model of translational outcomes for evaluating effectiveness.

Advancing ophthalmology medical student education: international insights and strategies for enhanced teaching
Abstract only*
Survey of Ophthalmology 62(2), 2020
Enhancing medical student education in ophthalmology can lead to improved eye health care delivery and patient outcomes across all primary care and specialty disciplines. There has been a resurgence of interest in delivering high-quality ophthalmic medical student education. This educational revival is both timely and topical. A general consensus has emerged that, rather than focusing solely on increasing teaching time, strategies are needed to focus on how to optimize the limited time allotted to ophthalmology. All physicians should be prepared to provide competent and confident ophthalmic care based on exciting innovations in ophthalmic curricula content, teaching methodologies, instructional design, learning objectives, and assessment methods. We provide an update on new and innovative ophthalmic teaching and learning practices. We critically appraise and summarize novel educational strategies from around the world that can be universally applicable in enhancing ophthalmology teaching in medical school curricula. It is our hope that, although there is marginalization of ophthalmology training, these strategies can be used to further improve teaching and learning in the limited time available in

medical curricula and provide an impetus for further research and innovations in teaching ophthalmology to medical students.

Determining the needs of ophthalmic trainees entering into specialist training and how they can be met
Advances in Medical Education and Practice 10, 2019
Problem: Starting ophthalmic specialty training can be daunting as new basic clinical examination and surgical skills must be acquired before meaningful assessment of patients can begin. No formal clinical induction currently exists with the aim to teach clinical and practical skills to new starters. Aim and objectives: To determine the experience and needs of ophthalmic trainees entering into specialist training. Using this information we developed and implemented a clinical skills training programme for Ophthalmology ST1s.

Effectiveness of flipped classroom combined with team-. Case-, lecture-, and evidence-based learning on ophthalmology teaching for eight-year program students
BMC Medical Education 419, 2019
Background: This study aimed to investigate the benefits and challenges of the flipped classroom combined with team-, case-, lecture- and evidence-based learning (FC-TCLEBL) for ophthalmology teaching for eight-year program students. […]
Results: Both the students and teachers were more satisfied with the FC-TCLEBL model. More students in the FC-TCLEBL group agreed that the course helped them to develop skills in creative thinking, problem solving, and teamwork. Students in the FC-TCLEBL group spent significantly more time preparing for class than those in the LBC group, but the time spent on review was significantly lower in the FC-TCLEBL group. The students from the FC-TCLEBL group performed better in a post-test on diabetic retinopathy (DR) as compared to the LBC group. Conclusions: FC-TCLEBL teaching model is effective and suitable for ophthalmology teaching.

Status of Canadian undergraduate medical education in ophthalmology Abstract only*
Canadian Journal of Ophthalmology 53(5), 2018
Objective: To use the perspectives of undergraduate program directors to assess the current structure and adequacy of undergraduate ophthalmology curricula at Canadian medical schools.

Sharpening the focus on ophthalmology teaching: perceptions of medical students and junior medical officers Abstract only*
Clinical & Experimental Ophthalmology 46(9), 2018
Importance: Worldwide, ophthalmology teaching is being reduced or eliminated from medical school curricula. The current state of ophthalmic teaching in Australia is unknown.
Background: To evaluate the perceptions of junior medical officers (JMOs) and medical students on ophthalmology teaching in Australian medical schools.

Enhancing Medical Student Education by Implementing a Competency-based Ophthalmology Curriculum
Asia-Pacific Journal of Ophthalmology 6(1), 2017
Purpose: To evaluate innovative educational strategies that help optimize ophthalmology teaching in a crowded medical curriculum. The knowledge acquisition and perceptions of medical students undertaking the revised competency-based curriculum were compared with the prior content-based curriculum within the Sydney Medical Program. […]

Present and future of the undergraduate ophthalmology curriculum: a survey of UK medical schools
International Journal of Medical Education 8, 2017
Objectives: To investigate the current undergraduate ophthalmology curricula provided by the UK medical schools, evaluate how they compare with the guidelines of the Royal

College of Ophthalmologists (RCOphth) and International Council for Ophthalmology (ICO), and determine the views of the UK ophthalmology teaching leads on the future direction of the curriculum. […]

A systematic review of best practices in teaching ophthalmology to medical students Abstract only*
Survey of Ophthalmology 61(1), 2016
Ophthalmic medical student education is a cornerstone to improving eye health care globally. We review the current state of the literature, listing barriers to potential best practices for undergraduate ophthalmology teaching and learning within medical curricula. We describe recent advances and pedagogical approaches in ophthalmic education and propose specific recommendations for further improvements and research. Future research should concentrate on developing teaching and learning innovations that may result in a more time- and resource-effective models for interactive and integrated learning. As well as demonstrating that a competency-based approach results not just in better eye health, but also improvements in patient care, education, and medical care in general. By optimizing teaching available through improved evidence-based education, the ultimate goal is to increase medical students' knowledge and produce graduates who are highly trained in eye examination skills, resulting in improved patient eye care through timely diagnosis, referrals, and treatment.

Undergraduate ophthalmology education – survey of UK medical schools Abstract only*
Medical Teacher 33(6), 2011
Changes in the UK undergraduate medical curriculum mean that a clinical placement in ophthalmology is no longer a requirement. An ophthalmic assessment is necessary for a full physical examination and failure to elicit and interpret signs could mean missing sight and life-threatening pathology. This study was to investigate current undergraduate ophthalmology teaching.

Equality, Diversity, and Inclusion

Challenges faced by women in optometry while delivering community eye care services Abstract only*
Optometry and Vision Science 102(4), 2025
Abstract: SIGNIFICANCE: India has a population of more than 1.40 billion with a humongous need for community eye health services. Understanding challenges faced by female optometrists in community eye care will help us address the needs and eventually improve eye and vision care services. The study also aims to give recommendations to policymakers and to leadership in hospitals that provide community eye health services and employ female optometrists. PURPOSE: The study aimed to understand the challenges faced by women in optometry while delivering community eye care services.

Diabetic retinopathy in rural communities: a review of barriers to access of care and potential solutions
Annals of Medicine 57(1), 2025
INTRODUCTION: Diabetic retinopathy (DR) is a leading cause of vision loss. With an estimated 38.4 million Americans diagnosed with DM, the disease exerts a significant burden on healthcare systems, especially in rural areas where access to care is limited. DR prevalence is notably higher in rural communities due to barriers such as geographical isolation, lower socioeconomic status, and provider shortages. OBJECTIVE: This narrative review explores the current state of DR management in rural areas, highlighting the increased incidence of the condition in these regions and the unique challenges faced by rural patients.

Empowering professional women in eye health: how to get involved
Community Eye Health Journal 37(126), 2025
The field of eye health presents numerous opportunities for collaboration toward gender equity. Many organisations are focused on promoting gender equity and enhancing women's roles in ophthalmology, health care, and leadership. This article highlights meaningful ways to get involved.

Gender-specific career pathways after postdoctoral qualification in ophthalmology: status quo and influencing factors-A questionnaire survey
Die Ophthalmologie, 2025
BACKGROUND: Despite an increasing number of women completing postdoctoral qualifications in ophthalmology, women remain significantly underrepresented in academic leadership positions and professorships. The aim of this study was to analyze the current gender-specific status of postdoctoral career paths in ophthalmology and potential influencing factors.

Advancing Gender Equity in International Eyecare: A Roadmap in Creating the Women Leaders in Eye Health (WLEH) Initiative
Healthcare 13(13), 2025
Abstract: Gender inequality remains a persistent issue in healthcare, especially in ophthalmology, where women face systemic barriers such as pay gaps, limited surgical opportunities, harassment, and unequal family expectations. Despite increasing entry into the field, women remain underrepresented in leadership, affecting career advancement and patient care. This study examines how virtual platforms, and co-led initiatives can address gender disparities in eye health.

Closing the Gender Gap Among Canadian Ophthalmology Societies Abstract only*
Seminars in Ophthalmology 39(2), 2024
OBJECTIVE: To evaluate gender distribution in Canadian ophthalmology societies' leadership and to determine associations between gender, academic productivity, and institutional rank., METHODS: We identified members and assessed their gender composition using publicly available updated webpages. SCOPUS database was used to gather research metrics.,

Sex Disparities in Ophthalmology From Training Through Practice: A Systematic Review Abstract only*
JAMA Ophthalmology 142(2), 2024
Abstract: Importance: Sex-based research in medicine has revealed inequities against females on almost every metric at almost every career stage; ophthalmology is no exception., Objective: To systematically review the experiences of females in ophthalmology (FiO) from training through practice in high-income countries (HICs).

Impact of Gender and Underrepresented in Medicine Status on Research Productivity Among Ophthalmology Residency Applicants Abstract only*
American Journal of Ophthalmology 257, 2024
PURPOSE: Insufficient representation of women and underrepresented in medicine (URiM) students remains a problem among the ophthalmology workforce. In the residency selection process, research productivity is an important factor. We aimed to determine the average research output listed by applicants and assess for differences by gender and race.

Disparities in Promotion and Retention Rates Among Underrepresented in Medicine Faculty in U.S. Ophthalmology Departments Abstract only*
Journal of Ophthalmology 258, 2024
PURPOSE: This study examines the rates and trends of faculty promotions within the field of ophthalmology, with comparative

emphasis on the rates of promotion among underrepresented in medicine (URiM) faculty.

Advancing Inclusive Research (AIR) Site Alliance: Facilitating the inclusion of historically underrepresented people in oncology and ophthalmology clinical research
Contemporary Clinical Trials 137, 2024
BACKGROUND: The Advancing Inclusive Research (AIR) Site Alliance is composed of clinical research centers that partner with Genentech, a biotechnology company, to advance the representation of diverse patient populations in its oncology and ophthalmology clinical trials, test recruitment, and retention approaches and establish best practices to leverage across the industry to achieve health equity.

Gender Representation Among Ophthalmology Fellowship Directors in 2022 Abstract only*
American Journal of Ophthalmology 259, 2024
PURPOSE: Women are underrepresented in several medical specialties, including ophthalmology. Reducing disparities is critical in diversifying perspectives and increasing equity within ophthalmology, both of which can ultimately improve care delivery. We examined ophthalmic fellowship programs directors in the United States to investigate gender disparities by subspecialty.

Diversity, equity and inclusion in ophthalmology Abstract only*
Current Opinion in Ophthalmology 34(5), 2023
PURPOSE OF REVIEW: Diversity, equity and inclusion (DEI) initiatives in ophthalmology have received increased attention in recent years. This review will highlight disparities, barriers to workforce diversity, as well as current and future efforts to improve DEI in ophthalmology.,

Pay Gap among Female and Male Ophthalmologists Compared with Other Specialties Abstract only*
Ophthalmology 129(1), 2022
Reports of physician remuneration suggest that sex-based differences in payments exist. However, many of these studies have relied on self-reported income from surveys or Medicare or Medicaid payments capturing a subset of physician payments. We aimed to determine whether female and male ophthalmologists are paid differently despite similar workload based on Ontario Health Insurance Plan (OHIP) fee-for-service billings and to compare these results with those of other surgical, medical procedural, and medical nonprocedural specialty groups. Although fee-for-service systems are thought to be less susceptible to pay discrepancies, referral patterns, operating room access, choice of procedures, frequencies of visits, and so-called creative billing may result in sex disparities in remuneration in fee-for-service systems. 1

An Eye on Gender Equality: A Review of the Evolving Role and Representation of Women in Ophthalmology Abstract only*
American Journal of Ophthalmology 236, 2022
PURPOSE: In recent decades, women have achieved greater representation in ophthalmology. Globally, women now constitute approximately 25%-30% of ophthalmologists and 35%-45% of trainees. Nevertheless, women remain under-represented in key areas, including positions of professional and academic leadership and ophthalmic surgical subspecialization. Furthermore, there is evidence that women in ophthalmology encounter more bias and discrimination across multiple domains than men, including a gender-pay gap that is wider than in many other surgical subspecialties. Women ophthalmologists and trainees report sharply differing training experiences from male peers, including fewer opportunities to operate, more bullying and harassment, less access to mentorship, and contrasting expectations around contributions to family life.

The Significance of Female Faculty and Department Leadership to the Gender Balance of Ophthalmology Residents Abstract only*
American Journal of Ophthalmology 238, 2022
Abstract: PURPOSE: To examine the gender balance of academic ophthalmology departments by determining the association between the rates of female residents in ophthalmology programs and department chair/residency program director (PD) gender and rate of female faculty within the department.

Enhancing Diversity in the Ophthalmology Workforce
Ophthalmology 129(10), 2022
Abstract: Health care teams are most effective at addressing complex problems and improving health outcomes for underserved populations when team members bring diverse life experiences and perspectives to the effort. With rates of visual impairment expected to increase in the United States by 2050, especially among minority populations, diversification of the ophthalmology workforce will be critical in reducing disparities in access to and quality of vision health care. Currently, ophthalmology is less diverse with respect to race, ethnicity, and gender than graduating medical classes and other medical specialties, as well as the general US population. In addition, data on diversity in sexual orientation and gender identity, socioeconomic status, and disability are lacking in ophthalmology. The Minority Ophthalmology Mentoring and Rabb-Venable Excellence in Ophthalmology Programs are examples of initiatives to increase racial and ethnic diversity in the workforce and can serve as models for increasing other aspects of inclusiveness. Other strategies for improving vision health care for all Americans include continuing to support existing diversity programs and creating new ones; addressing unconscious and implicit bias in medical school, residency, and faculty selections; conducting holistic reviews of medical school and residency applications; diversifying selection committees and leadership; and encouraging faculty development of underrepresented groups. Copyright Published by Elsevier Inc.

Gender and ethnic diversity in global ophthalmology and optometry association leadership: a time for change
Ophthalmic & Physiological Optics 41(3), 2021
Abstract: PURPOSE: To assess the diversity of leadership bodies of member organisations of the International Council of Ophthalmology (ICO) and the World Council of Optometry (WCO) in terms of: (1) the proportion who are women in all world regions, and (2) the proportion who are ethnic minority women and men in Eurocentric high-income regions.

Ophthalmology Departments Remain Among the Least Diverse Clinical Departments at United States Medical Schools
Ophthalmology 128(8), 2021
PURPOSE The current demographics of the ophthalmology workforce do not reflect the diverse United States population, which has implications for addressing health disparities. The demographics of ophthalmology department faculty may influence the recruitment of underrepresented students into the field. This study sought to determine how the racial and ethnic demographics of ophthalmology department faculty compare with those of other clinical departments at United States medical schools.

Residency Program Directors of United State Ophthalmology Programs: a descriptive analysis Abstract only*
American Journal of Ophthalmology 209, 2020
Purpose: To analyze the academic background, scholarly achievements, and demographic characteristics of all US ophthalmology residency program directors (PDs).

Michigan Ophthalmology Pipeline: Exploring a Mentorship Model to Increase Diversity in Ophthalmology
Journal of Academic Ophthalmology 12(01), 2020
Background: Ethnic concordance between physicians and patients improves compliance and therapeutic benefit. Current literature shows a lack of diversity within ophthalmology. Thus, we aimed to develop a longitudinal mentorship program between first year ophthalmology residents (PGY2s) and first year medical students (M1s) coming from minority communities underrepresented in medicine (URM) to provide early exposure to the field. […]

Current and future status of diversity in ophthalmologist workforce
JAMA Ophthalmology 134(9), 2016
Importance: Increasing the level of diversity among ophthalmologists may help reduce disparities in eye care. Objective: To assess the current and future status of diversity among ophthalmologists in the workforce by sex, race, and ethnicity in the context of the available number of medical students in the United States.[…]

Decadelong profile of women in ophthalmic publications Abstract only*
JAMA Ophthalmology 133(3), March 2015
IMPORTANCE In recent decades, there has been an increase in the number of women practicing medicine. We believe this shift may be reaching academic publications in ophthalmology and changing gender trends. OBJECTIVE To determine whether there has been an increase in women publishing academic articles and editorials in ophthalmology during the past decade. […]

Aging and feminization of the physician workforce in Canada: comparing ophthalmologists to all other physicians Abstract only*
Canadian Journal of Ophthalmology 49(3), 2014
OBJECTIVE To describe the changing demographic of ophthalmologists compared with all other physicians in Canada.

Integrated Care

Implementing integrated care in ophthalmology: a community case study
Frontiers in Medicine 10, 2023
Introduction: In 2017, in a context of financial and patient care challenges, Moorfields Eye Hospital in the borough of Croydon launched the first Ophthalmology Integrated Care Contract in the United Kingdom.

The application of a person-centred approach to process improvement in ophthalmology services in the North East of the Republic of Ireland
International Practice Development Journal 13(1), 2023
Abstract: Background: Ophthalmology in the Republic of Ireland has one of the longest waiting lists in healthcare, with around 44,000 people awaiting a first outpatient appointment. In the north-east region, 12,500 people are waiting. The North-Eastern Region Integrated Eye Care Service (NERIECS) was established in 2021 to improve patient care and access to services. A key driver for the team was to understand 'how we work together' to enable a shared vision of change within regional services. Aim: To support hospital and community ophthalmology services, which comprise eight organisations in the region, to prepare for the development of system-level integration of eyecare services.

Leadership

A New Era of Ophthalmology Leadership? A Descriptive and Comparative Analysis of Ophthalmology Department Chairs in 2024 Abstract only*

American Journal of Ophthalmology 269, 2025
PURPOSE: To (1) characterize and analyze the demographics and scholarly achievements of United States (US) academic ophthalmology department chairs, and (2) to elucidate trends in the academic and demographic profiles of newly hired department chairs.

Leadership in ophthalmology by humanity and competence
Abstract only*
Ophthalmologie 121, 2024
Abstract: Leadership in healthcare institutions has a direct impact on the practice of the medical and nursing professions. The respective leadership style that is cultivated in a medical institution therefore has a direct impact on the personnel and thus a direct impact on the treatment of patients, in both senses of the word. Leadership in healthcare should therefore inspire, motivate, and guide healthcare workers to use their individual and collective skills as well as the available resources in the best possible way for the benefit of patients. This is the task and obligation of all those working in the healthcare system. The German Society of Ophthalmology (DOG) has established a leadership academy for ophthalmologists to meet the requirements of the modern healthcare market for leadership qualifications.

Leadership Development in Ophthalmology: Current Impact and Future Needs
Journal of Academic Ophthalmology 13(1), 2021
Abstract: Importance There is a lack of peer-reviewed literature on leadership development programs (LDP) in ophthalmology. Research into LDP demographics, outcomes, and methodology is needed. Objective The aim of the study is to evaluate the extent to which LDPs targeting ophthalmologists meet the needs of emerging leaders.

The Impact of the American Academy of Ophthalmology's Leadership Development Program: Experience from the First 20 Years
Journal of Academic Ophthalmology 13(2), 2021
Abstract: Objective This study aimed to analyze the effectiveness of the American Academy of Ophthalmology (AAO)'s Leadership Development Program (LDP), report the program's impact on participants in attaining ophthalmic leadership positions, and identify opportunities to improve future LDP programming.

Academic background, professional experience, and research achievements of United States academic ophthalmology leadership Abstract only*
Irish Journal of Medical Science 190(4), 2021
PURPOSE To characterize the academic background, professional experience, and scholarly achievements of United States (US) academic ophthalmologists serving in leadership positions.

Leadership in Ophthalmology: the role of physicians-MBAs
Abstract only*
American Journal of Ophthalmology 188, 2018
PURPOSEAs American health care evolves, an increasing number of doctors are pursuing MBAs. However, relatively little is known about how business training translates into their future careers. This study characterizes ophthalmologists who have completed MBAs and identifies opportunities for physician leadership in the field.

Leadership of United States Academic Departments of Ophthalmology: Chairperson characteristics, accomplishments, and personal insights Abstract only*
American Journal of Ophthalmology 186, 2018

PURPOSE To report on the characteristics, accomplishments, and past experiences of current academic ophthalmology department chairs.

New and extended roles

The Future Role of Physician Associates in Ophthalmology Services
British & Irish Orthoptic Journal 21(1), 2025
As a response to increasing pressures on hospital eye services, the Royal College of Ophthalmologists (RCOphth) has started exploring the integration of physician associates (PAs) into ophthalmology as a means of expanding the ophthalmic workforce while maintaining high standards of care. However, the proposal has sparked a discussion within the ophthalmic community regarding the role of PAs in a specialty that already benefits from a well-established and specialized multidisciplinary team. Concerns have been raised about their short generalist training, which may not fully prepare them for the complexities of ophthalmic care, as well as the high cost of their integration compared to other healthcare professionals. Given these issues, upskilling existing allied health professionals and leveraging digital health innovations could be more effective solutions in addressing workforce shortages. The Royal College of Ophthalmologists (RCOphth), having endorsed the pilot scheme, bears the burden of proof to demonstrate the efficacy and value of PAs in this specialized field, ensuring that any workforce expansion aligns with the high standards expected in ophthalmic care.

The Role of Orthoptists in Refraction
British & Irish Orthoptic Journal 21(1), 2025
Purpose: In 2022, the General Optical Council initiated a call for evidence concerning the Opticians Act. This consultation aimed to gather input and evidence relevant to potential modifications to the Opticians Act. One piece of research that was commissioned aimed to investigate the role of orthoptists in refraction.

Post COVID glaucoma service redesign utilising electronic patient triage and community optometry clinics (Fife, Scotland 2020-2022)
BMC Ophthalmology 25(1), 2025
BACKGROUND: COVID-19 caused a huge backlog of patients in glaucoma clinics. This study describes redesign of an entire glaucoma service with electronic patient triage to three levels and utilisation of the Scottish optometry infrastructure of upskilled optometrists.

Innovative care models: Expanding nurses' and optometrists' roles in ophthalmology
Nursing Ethics 32(6), 2025
Abstract: The expanding demands of healthcare necessitate novel methods of increasing the supply of trained professionals to enhance the delivery of care services. One means of doing so is to expand allied health professionals' scope of practice. This paper explores the ethics of two examples of such expansion in ophthalmology, comparing the widely accepted practice of nurses administering intravitreal injections and the relatively less prevalent optometrists functioning as physician extenders.

Analyzing the training of PAs in ophthalmology
JAAPA 37(4), 2024
OBJECTIVE: This study sought to determine the role of physician associates/assistants (PAs) in ophthalmology, the balance between barriers and facilitators in training, and optimal training for PAs in ophthalmology.

Changing practice for the non-medical ophthalmic hospital workforce in the UK-a snapshot survey

Eye 35(7), 2020
BACKGROUND/OBJECTIVES To obtain a picture of the current status, training and governance for advanced practice and extended roles in the ophthalmic hospital non-medical workforce.

New ways of working

The effect of visual acuity measurement on triage effectiveness in an ophthalmic emergency department Abstract only*
Graefes Archive for Clinical & Experimental Ophthalmology 263(4), 2025
PURPOSE: The effect of pre-triage visual acuity (VA) measurement on triage accuracy in a busy ophthalmic casualty department was investigated as a possible means to improve triage quality.

Cohort profile: Design and methods for Project HERCULES (Healthcare Exemplar for Recovery from COVID 19 Using Linear Examination Systems): Multi-disciplinary implementation and evaluation of an asynchronous review clinic in NHS eye-care services
PLoS ONE 20(9), 2025
OBJECTIVES: To describe the research principles and cohort characteristics of the multi-disciplinary Project HERCULES, an innovative model of safe high-volume outpatient eye-care service for patients with stable chronic eye diseases. Results and analyses of the workstreams within Project HERCULES will be reported elsewhere. The rationale was to improve eye-care capacity in the National Health Service (NHS) in England through the creation of technician-delivered monitoring in a large retail-unit in a London shopping-centre, with remote asynchronous review of results by clinicians (named Eye-Testing and Review through Asynchronous Clinic (Eye-TRAC)). UCL's Bartlett School of Sustainable Construction developed the RIBA (Royal Institute of British Architects) Stage 1 briefing requirements for optimal design specifications for this model of care from first principles research, by analysing ergonomic data from multiple iterations.

Patients' Perspectives on Social Barriers to Care and the Acceptability and Impact of a Community Health Worker Program in Outpatient Ophthalmology
Clinical Ophthalmology 19, 2025
Introduction: Community Health Workers (CHWs) are trusted members of the community who can work as an integral liaison between community members and health care to address adverse social determinants of health (SDoH). The purpose of this semi-qualitative study was 1) solicit patient-reported social needs and what they consider barriers to their ophthalmic care, 2) determine the acceptability of discussing SDoH in eye care, and 3) determine the acceptability of leveraging a CHW to address social needs.

Acute community ophthalmology services provided by independent prescribing optometrists supporting hospital eye services during the COVID-19 outbreak
Journal of Optometry 15(2), 2022
BACKGROUND: Specialised Independent Prescribing (IP) community optometrists provided acute eye care during the COVID-19 crisis ensuring that over-stretched hospital emergency eye care was supported, therefore local overall urgent eye care provision was not affected.

Evaluation of a New Model of Care for People with Complications of Diabetic Retinopathy: The EMERALD Study
Ophthalmology 128(4), 2021
PURPOSE: The increasing diabetes prevalence and advent of new treatments for its major visual-threatening complications (diabetic macular edema DME] and proliferative diabetic retinopathy PDR]), which require frequent life-long follow-up,

have increased hospital demands markedly. Subsequent delays in patient's evaluation and treatment are causing sight loss. Strategies to increase capacity are needed urgently. The retinopathy (EMERALD) study tested diagnostic accuracy, acceptability, and costs of a new health care pathway for people with previously treated DME or PDR., DESIGN: Prospective, multicenter, case-referent, cross-sectional, diagnostic accuracy study undertaken in 13 hospitals in the United Kingdom.

Nursing

An integrative literature review of the effectiveness of nurse-led clinics in ophthalmology Abstract only*
Insight 42(2) pp. 22-28, 2017
The purpose of this review was to determine the best available evidence related to the effectiveness of nurse-led clinics in ophthalmology. The review question was: How effective are nurse-led clinics in ophthalmology? Specifically, the objectives were to identify whether nurse-led clinics:
• Reduced re-presentation rates,
• Reduced surgical complications,
• Alleviated anxiety, and
• Promoted patient satisfaction.

Glaucoma diagnosis and treatment: the role of the ophthalmic nurse Abstract only*
Insight 41(1), 2016
Glaucoma is one of the single largest causes of irreversible blindness. Glaucomatous vision loss is preventable with the appropriate diagnostic testing and treatment. Ophthalmic nurses play and important role in ensuring the success of glaucoma diagnosis and treatment.

Quality Improvement

Using Lean Six Sigma techniques to improve efficiency in outpatient ophthalmology clinics
BMC Health Services Research 21(1), 2021
BACKGROUND: Increasing patient numbers, complexity of patient management, and healthcare resource limitations have resulted in prolonged patient wait times, decreased quality of service, and decreased patient satisfaction in many outpatient services worldwide. This study investigated the impact of Lean Six Sigma, a service improvement methodology originally from manufacturing, in reducing patient wait times and increasing service capacity in a publicly-funded, tertiary referral outpatient ophthalmology clinic.

Supply

Mismatch in Supply and Demand for Neuro-Ophthalmic Care
Journal of Neuro-Ophthalmology 42(1), 2022
Publication date: March 2021
BACKGROUND Previous research suggests the number of neuro-ophthalmologists in the United States may be below a level that provides sufficient access to neuro-ophthalmic care in much of the United States. However, national estimates of the amount of clinical time spent on neuro-ophthalmology are lacking.

2017 National Optometry Workforce Survey Abstract only*
Optometry and Vision Science 98(5), 2021
Significance: Planning for the effective delivery of eye care, on all levels, depends on an accurate and detailed knowledge of the optometric workforce and an understanding of demographic/behavioral trends to meet future needs of the public. Purpose: The purposes of this study were to assess the current and future supply of doctors of optometry and to examine

in-depth trends related to (1) demographic shifts, (2) sex-based differences, (3) differences in practice behaviors in between self-employed and employed optometrists, and (4) the concept of additional capacity within the profession.

Demographics and distribution of new entrants to the optometry profession in Australia Abstract only*
Clinical and Experimental Optometry, March 2021
CLINICAL RELEVANCE An assessment of the total number, demographics and geographic distribution of new entrants to the optometry profession in Australia can assist planning for workforce requirements. BACKGROUND Over the past decade, the number of registered optometrists in Australia has increased by 30.1 per cent, a rate that is greater than the population growth of the country (12.1 per cent). Concerns have been expressed about the size of the optometry workforce in a context of increasing numbers of graduating optometrists. This paper analyses data obtained from the Australian Health Practitioner Regulation Agency (AHPRA) about new entrants to the profession and their initial practice location during the period 1 July 2010 to 30 June 2018.

Workforce Shortage for Retinopathy of Prematurity Care and Emerging Role of Telehealth and Artificial Intelligence Abstract only*
Paediatric Clinics of North American 67(4), 2020
Retinopathy of prematurity (ROP) is the leading cause of childhood blindness in very-low-birthweight and very preterm infants in the United States. With improved survival of smaller babies, more infants are at risk for ROP, yet there is an increasing shortage of providers to screen and treat ROP. Through a literature review of new and emerging technologies, screening criteria, and analysis of a national survey of pediatric ophthalmologists and retinal specialists, the authors found the shortage of ophthalmology workforce for ROP a serious and growing concern. When used appropriately, emerging technologies have the potential to mitigate gaps in the ROP workforce.

Do we have enough ophthalmologists to manage vision-threatening diabetic retinopathy? A global perspective Abstract only*
Eye 34, 2020
We aimed to estimate the supply of ophthalmologists in relation to the global and regional burden of vision-threatening diabetic retinopathy (VTDR). Diabetes mellitus (DM) population data from seven world regions were obtained from the International Diabetes Federation Atlas 2017. A systematic review was performed to include population-, community-based studies that reported country-specific VTDR prevalence. Random effect meta-analysis was then performed to estimate global and regional VTDR prevalence.

Estimated number of ophthalmologists worldwide (International Council of Ophthalmology update): will we meet the needs?
The British Journal of Ophthalmology 104, 2020
BACKGROUND/AIMS To estimate 2015 global ophthalmologist data and analyse their relationship to income groups, prevalence rates of blindness and visual impairment and gross domestic product (GDP) per capita.

Workforce Issues in Paediatric Ophthalmology Abstract only*
Journal of Paediatric Ophthalmology and Strabismus 57(1), 2019
The fate of pediatric ophthalmology may be in jeopardy. For the past 20 years, there has been declining interest in the field compared to other subspecialties in ophthalmology, as fellowship positions and jobs remain unfilled. Of those fellows who do match in pediatric ophthalmology and strabismus, many are international medical graduates who often return to their native countries to practice, further diminishing the supply of pediatric

ophthalmologists in the United States. In previous surveys, resident graduates have expressed disinterest in the field, reluctance to work with children, inadequate reimbursements, and insufficient interactions with faculty as reasons not to pursue this subspecialty. Millions of people throughout the United States do not have access to pediatric ophthalmologists, highlighting the issue of unequal distribution. As more pediatric ophthalmologists retire, there is concern that there will not be enough providers to meet the demands of this subspecialty. Although many of these factors deterring residents from entering this field have been resolved, the major issue of financial reimbursements has not been adequately addressed.

Could adoption of the rural pipeline concept redress Australian optometry workforce issues? Abstract only*
Clinical and Experimental Optometry 102(6), 2019
People living in rural and remote areas have poorer ocular health outcomes compared with those living in metropolitan areas. Reasons for this are multiple and complex but access to care is consistently reported as a defining factor. The geographic maldistribution of eye-care professionals is a major obstacle for regional, rural and remote Australians seeking care. Research from the medical profession suggests adopting the 'rural pipeline' concept to address the issue of maldistribution. This approach appears to have had some success in medicine, and involves recruiting students from a rural background, exposing students to rural practice through placements and offering graduates incentives and support to practice rurally. Lessons could be learnt from the medical field as there is a dearth of literature describing the utilisation of the rural pipeline in allied health. However, given the differences between professions it cannot be assumed factors and results will be the same. A greater understanding is required to determine whether optometry is a profession which may benefit from the rural pipeline concept.

Optometric supply and demand in Australia: 2011-2036 Abstract only*
Clinical and Experimental Optometry 98(3), 2015
Background: The effective size of the optometric workforce is dependent on graduate numbers, retention rates and immigration and is influenced by age, gender and working hours of optometrists. This paper presents modelling results of the relationship between the projected Australian optometric workforce and projected demand for optometric services for the period 2011 to 2036. Nine hypothetical optometric supply-side and demand-side scenarios are presented.

Optometry Services in Ontario: Supply – and Demand-side factors from 2011 to 2036
Healthcare Policy 10(1), 2014
Optometric labour market projections are provided. First, population growth and ageing-based estimates of the rate of increase of eye-care services in Ontario from 2011 to 2036 are presented, holding the age–sex structure of utilization constant. Then, using data on the 2011 supply and working hours of Ontario's optometrists, the number of optometrists needed to keep the level of optometric services per age–sex-adjusted person comparable over time is estimated. The projections suggest that the number of Ontario optometrists should grow by approximately 30–40 full-time equivalents per year; to offset retirements and account for decreasing work hours, this suggests 77–90 new practitioners are required each year. However, in recent years, the number of Ontario optometrists has been growing faster than this, suggesting either that demand has exceeded supply and/or surpluses will accumulate if this trend continues.

Technology

Telemedicine in ophthalmology
Wiener Medizinische Wochenschrift 175(7-8), 2025
Since its beginnings in the 1970s, telemedicine has advanced extensively. Telemedicine is now more accessible and powerful than ever thanks to developments in medical imaging, Internet accessibility, advancements in telecommunications infrastructure, exponential growth in computing power, and related computer-aided diagnoses. This is especially true in the field of ophthalmology. With the COVID 19 pandemic serving as a catalyst for the widespread adoption and acceptance of teleophthalmology, new models of healthcare provision integrating telemedicine are needed to meet the challenges of the modern world. The demand for ophthalmic services is growing globally due to population growth, aging, and a shortage of ophthalmologists. In this review, we discuss the development and use of telemedicine in the field of ophthalmology and shed light on the benefits and drawbacks of teleophthalmology.

Use of a smartphone-based, non-mydriatic fundus camera for patients with red flag ophthalmic presentations in a rural general practice
Journal of Primary Health Care 17(1), 2025
Abstract: Introduction: Fundus examination by direct ophthalmoscopy is widely used in general practice; however, it offers limited field of view, requires close approximation to the patient, has a steep learning curve and is a difficult skill to master and maintain. Non-mydriatic fundus photography (NMFP) offers an alternative with a wider field of view, ability for image analysis and transmission, and is able to be conducted by allied healthcare staff. Aim: This study aimed to compare the use of direct ophthalmoscopy with smart-phone NMFP in a large rural general practice. It also aimed to analyse the number of adequate views and positive findings achieved with each instrument and the impact of NMFP on ophthalmology referral decisions.

Using Machine Learning to Identify Ophthalmology Subspecialty Care and Advance Workforce Research with the IRIS R Registry (Intelligent Research in Sight)
Ophthalmology Science 5(6), 2025
Purpose: To develop machine-learning models to identify ophthalmology subspecialists using deidentified patient data from a large database.

Global Trends and Emerging Themes in Tele-Ophthalmology Research: A Bibliometric Analysis (1993 to 2024) Abstract only*
Seminars in Ophthalmology, 2025
BACKGROUND: Tele-ophthalmology is transforming eye care delivery, particularly in remote and underserved areas, where specialist shortages and geographic barriers prevent millions from receiving timely diagnosis and treatment for preventable blindness. Tele-ophthalmology has emerged as a critical solution to bridge these care gaps, with applications ranging from remote screening, diagnosis, and monitoring of conditions like diabetic retinopathy and glaucoma. Despite rapid technological advances and growing implementation, the research landscape lacks literature providing an overview of global trends, collaborative patterns, and emerging innovations in this field, hindering strategic research planning and evidence-based policy development for expanding digital eye care services. This study aims to analyse global trends and emerging themes in tele-ophthalmology research to fill this knowledge void and provide strategic insights for researchers, clinicians, and policymakers.

Patient perspectives on ocular oncology care at hybrid telehealth satellite offices Abstract only*
Canadian Journal of Ophthalmology 60(1), 2025
Abstract: OBJECTIVE: To assess patient satisfaction with the

hybrid telehealth model in patients undergoing follow-up care in ocular oncology. DESIGN: Retrospective survey study. PARTICIPANTS: All patients who visited 1 of 2 satellite telehealth offices between July 2021 and October 2022 for their follow-up ocular oncology appointment.

Feasibility study of tele-ophthalmology in a prison setting
Journal Français d'Ophtalmologie 48(6), 2025
INTRODUCTION: Access to specialty care in prisons is complex and difficult, particularly in ophthalmology. The main goal of this study was to set up an ophthalmology telemedicine service in prisons to improve visual screening.

Social Media in Neuro-Ophthalmology: Paradigms, Opportunities, and Strategies Abstract only*
Journal of Neuro-Ophthalmology 43(3), 2023
BACKGROUND: Social media (SoMe) is an integral part of life in the 21st century. Its potential for rapid dissemination and amplification of information offers opportunities for neuro-ophthalmologists to have an outsized voice to share expert-level knowledge with the public, other medical professionals, policymakers, and trainees. However, there are also potential pitfalls, because SoMe may spread incorrect or misleading information. Understanding and using SoMe enables neuro-ophthalmologists to influence and educate that would otherwise be limited by workforce shortages.

Artificial intelligence in ophthalmology: The path to the real-world clinic
Cell Reports Medicine 4(7), 2023
Abstract: Artificial intelligence (AI) has great potential to transform healthcare by enhancing the workflow and productivity of clinicians, enabling existing staff to serve more patients, improving patient outcomes, and reducing health disparities. In the field of ophthalmology, AI systems have shown performance comparable with or even better than experienced ophthalmologists in tasks such as diabetic retinopathy detection and grading. However, despite these quite good results, very few AI systems have been deployed in real-world clinical settings, challenging the true value of these systems. This review provides an overview of the current main AI applications in ophthalmology, describes the challenges that need to be overcome prior to clinical implementation of the AI systems, and discusses the strategies that may pave the way to the clinical translation of these systems.

Impact of an email advice service on filtering and refining ophthalmology referrals in England Abstract only*
International Ophthalmology 43(11), 2023
Abstract: PURPOSE: The growing capacity-demand imbalance has necessitated the accelerated digital transformation of eye care services. The role of Oxford Eye Hospital's (OEH) email advice service has become even more relevant in the post-Covid era. We sought to evaluate its impact on referrals to secondary care.

Application of Artificial Intelligence in the Early Detection of Retinopathy of Prematurity: Review of the Literature
Neonatology 120(5), 2023
Abstract: Retinopathy of prematurity (ROP) is a potentially blinding disease in premature neonates that requires a skilled workforce for diagnosis, monitoring, and treatment. Artificial intelligence is a valuable tool that clinicians employ to reduce the screening burden on ophthalmologists and neonatologists and improve the detection of treatment-requiring ROP. Neural networks such as convolutional neural networks and deep learning (DL) systems are used to calculate a vascular severity score (VSS), an important component of various risk models. These DL systems have been validated in various studies, which are reviewed here. Most importantly, we discuss a promising

study that validated a DL system that could predict the development of ROP despite a lack of clinical evidence of disease on the first retinal examination. Additionally, there is promise in utilizing these systems through telemedicine in more rural and resource-limited areas. This review highlights the value of these DL systems in early ROP diagnosis. Copyright © 2023 S. Karger AG, Basel.

Navigating Personal and Professional Development Through Social Media in Ophthalmology
Clinical Ophthalmology 16, 2022
Background: Although social media use among physicians skyrocketed during the COVID-19 pandemic, its role for networking, mentorship, and support among ophthalmologists remains unknown. The objective of this study was to elucidate how ophthalmologists use social media for navigating challenges related to personal and professional development.

A survey of clinicians on the use of artificial intelligence in ophthalmology, dermatology, radiology and radiation oncology
Scientific Reports (11)5193, 2021
Artificial intelligence technology has advanced rapidly in recent years and has the potential to improve healthcare outcomes. However, technology uptake will be largely driven by clinicians, and there is a paucity of data regarding the attitude that clinicians have to this new technology.

The Electronic Health Record in Ophthalmology: Usability Evaluation Tools for Health Care Professionals
Ophthalmology Therapy 10, 2021
Introduction: The adoption of the electronic health record (EHR) has grown rapidly in ophthalmology. However, despite its potential advantages, its implementation has often led to dissatisfaction amongst health care professionals (HCP). This can be addressed using a user centred design (UCD) which is based on the philosophy that 'the final product should suit the users, rather than making the users suit the product'. There is often no agreed best practice on the role of HCPs in the UCD process. In this paper, we describe practical qualitative methodologies that can be used by HCPs in the design, implementation and evaluation of ophthalmology EHRs.

Clinical Outcomes of a Hospital-Based Teleophthalmology Service: What happens to patients in a Virtual Clinic? Abstract only*
Ophthalmology Retina 3(5), 2019
PURPOSE: Demographic changes as well as increasing referral rates from national screening services put pressure on available ophthalmologic resources in the United Kingdom. To improve resource allocation, virtual medical retina clinics were introduced in 2016 in Moorfields Eye Hospital, South Division. The scope of this work was to assess clinical outcomes of patients followed up in a virtual clinic setting.

Teaching ophthalmology for machines
Open Ophthalmology Journal 12, June 2018
Physicians and engineers are currently working together to improve early ophthalmology diagnosis and follow-up. Algorithms are created for what is being called machine learning to assist medical decision-making and improve medical care. With the aim of providing better health service to populations, research has been done to develop new protocols of care that involve the use of artificial intelligence as a new tool for physicians to diagnose their patients more effectively and quickly.

Evaluation of eLearning for the teaching of undergraduate ophthalmology at medical school: a randomized controlled crossover study
Eye 32, May 2018

Aim: To compare ophthalmology teaching delivered by eLearning with traditional lectures, in terms of undergraduate performance and satisfaction.

Real-time teleophthalmology video consultation: an analysis of patient satisfaction in rural Western Australia Abstract only*
Clinical and Experimental Optometry, April 2017
BACKGROUND: Teleophthalmology, particularly real-time video consultation, holds great potential in Australia and similar countries worldwide, where geography, population and medical workforce distribution make it difficult to provide specialist eye services outside of major cities. Assessment and referrals from rural optometrists are vital to the success of teleophthalmology. While there is good evidence for the efficacy of such services, there is limited evidence for patient satisfaction with video consultation

A technician-delivered 'virtual clinic' for triaging low-risk glaucoma referrals
Eye 31,2017
Purpose: The purpose of this study is to describe the outcomes of a technician-delivered glaucoma referral triaging service with 'virtual review' of resultant data by a consultant ophthalmologist.

Supply and perceived demand for teleophthalmology in triage consultations in California Emergency Departments
JAMA Ophthalmology 134(5), 2016
Importance: Determining the perceived supply and potential demand for teleophthalmology in emergency departments could help mitigate coverage gaps in emergency ophthalmic care. Objective: To evaluate the perceived current need for and availability of ophthalmologist coverage in California emergency departments and the potential effect of telemedicine for ophthalmology triage and consultation.

Workforce

The UK paediatric ophthalmology workforce crisis - a national perspective Abstract only*
Eye 39(9), 2025
INTRODUCTION: The significant and pressing workforce issues facing paediatric ophthalmology were highlighted by the 2022 RCOphth census. Here we present a national UK survey with the aim of deepening the understanding of the size and contributing factors, and inform future strategies.

The community optometry workforce in Scotland: supporting sustainable eye care delivery Abstract only*
Eye 39(5), 2025
BACKGROUND: In early 2024, NHS Scotland published community optometrist workforce and activity data at a national level for the first time in the UK. These data are now over two years old, and anecdotal reports suggest changes amongst optometrists' work-patterns post-pandemic. To identify if that data continues to be reflective of the community optometrist workforce, the aim of this paper is to provide equivalent data for 2022 and 2023.

Ophthalmology Workforce Projections in the United States, 2020 to 2035
Ophthalmology 131(2), 2024
PURPOSE: To analyze ophthalmology workforce supply and demand projections from 2020 to 2035., DESIGN: Observational cohort study using data from the National Center for Health Workforce Analysis (NCHWA).,

The genetic counselor workforce in inherited retinal disease clinics: a descriptive assessment Abstract only*

Ophthalmic Genetics 44(6), 2023
BACKGROUND: Genetic counselors (GCs) have practiced in Inherited Retinal Disease (IRD) clinics for several decades. In this small subspecialty of genetic counseling, GCs are critical for patient understanding of genetic information, which can have prognostic, systemic, family planning and therapeutic implications. Recently, both access to genetic testing for IRDs and the number of genes associated with IRDs (>350) has increased dramatically. However, the practice models and roles of IRD GCs have not been previously described.

Demographics and distribution of the optometry profession in Australia: 2011 to 2019 Abstract only*
Clinical & Experimental Optometry 106(8), 2023
CLINICAL RELEVANCE: An assessment of the total number, demographics and geographic distribution of optometrists in Australia may inform policy to address the maldistribution of the workforce., BACKGROUND: Concerns have been expressed about the growth of the optometry workforce in the context of, in the last decade, the establishment of four new optometry programs in addition to the three long-standing programs.

Scope of practice of optometrists working in the UK Hospital Eye Service: Second national survey
Ophthalmic & Physiological Optics : The Journal of the British College of Ophthalmic Opticians (Optometrists) 42(3), 2022
PURPOSE: As the landscape in ophthalmology and related commissioning continues to change, there is a pressing need to re-evaluate the current scope of practice of hospital optometrists working within secondary care in the UK. We aim to establish if the skills or services delivered by optometrists have changed to meet varying demands, and to better understand what changes in practice may have arisen as a result of COVID-19.

Considerations for Training and Workforce Development to Enhance Rural and Remote Ophthalmology Practise in Australia: A Scoping Review
International Journal of Environmental Research and Public Health 19(14), 2022
Australia has one of the lowest per capita numbers of ophthalmologists among OECD countries, and they predominantly practise in metropolitan centres of the country. Increasing the size and distribution of the ophthalmology workforce is of critical importance. The objective of this review was to investigate the context of rural ophthalmology training and practise in Australia and how they relate to future ophthalmology workforce development. This scoping review was informed by Arksey and O'Malley's framework and the methodology described by Coloqhuon et al.

Demographics and distribution of new entrants to the optometry profession in Australia Abstract only*
Clinical & Experimental Optometry 104(2), 2021
Abstract: CLINICAL RELEVANCE: An assessment of the total number, demographics and geographic distribution of new entrants to the optometry profession in Australia can assist planning for workforce requirements., BACKGROUND: Over the past decade, the number of registered optometrists in Australia has increased by 30.1 per cent, a rate that is greater than the population growth of the country (12.1 per cent). Concerns have been expressed about the size of the optometry workforce in a context of increasing numbers of graduating optometrists. This paper analyses data obtained from the Australian Health Practitioner Regulation Agency (AHPRA) about new entrants to the profession and their initial practice location during the period 1 July 2010 to 30 June 2018.

Geographic distribution of eye-care practitioners in Aotearoa/New Zealand: implications for future eye health workforce Abstract only*
Clinical and Experimental Optometry 103(4), July 2020
BACKGROUND The New Zealand Ministry of Health provides funding for the delivery of health care across regions via 20 District Health Boards. Funding includes the subsidisation of therapeutic pharmaceutical agents/drugs. The distribution of optometrists and ophthalmologists across the regions was investigated to understand the accessibility of eye care in New Zealand. Changes made to the optometrists' scope of practice in 2005 and in 2014 increased the range of drugs that suitably qualified optometrists could prescribe. Therefore, the distribution of optometrists authorised to prescribe drugs and those not authorised to prescribe drugs was also investigated.

Competency Frameworks

Is it the right time to promote competency-based European Training Requirements in Ophthalmology? A European Board of Ophthalmology survey
Acta Ophthalmologica, 2025
To report national practices and recent progress in competency-based medical education (CBME) implementation in ophthalmology across European countries.

Eye Care Competency Framework
World Health Organisation, May 2022
The WHO Eye care competency framework (ECCF) is a tool that will provide a set of global comprehensive competencies and activities. This tool will enable planning and development of eye care workforce to be aligned to a recognized standard of competencies and activities and will assist with maintaining an effective eye care workforce in terms of composition, deployment and ongoing availability to meet population needs. The ECCF can be used by education and training institutions, policy-makers and regulation authorities, eye care service providers, and non-governmental organizations.

The Ophthalmic Common Clinical Competency Framework – Curriculum
NHS England
The Ophthalmic Common Clinical Competency Framework (OCCCF) provides standards and guidance for the knowledge and skills required for non-medical eye healthcare professionals to deliver patient care. It is well known that there is a need for a systematic patient-centred approach to multi-disciplinary education and training in order to ensure standardised and recognised competences across all ophthalmic secondary care locations in the UK.

Ophthalmic Specialist Training Curriculum
The Royal College of Ophthalmologists
The OST Curriculum is underpinned by an e-Portfolio system, where you should record your progress against the learning outcomes.

Ophthalmic Practitioner Training
The Royal College of Ophthalmologists
The Ophthalmic Practitioner Training (OPT) Programme has been developed from the Ophthalmic Common Clinical Competency Framework (OCCCF). This is an opportunity for ophthalmology departments to transform their workforce and improve capacity within their service.

Community Ophthalmology Framework
Source: Royal College of Ophthalmologists
Publication date: July 2015

This document outlines the broad components of a Community Ophthalmology Service. Such a service is distinct from primary and secondary care services and is defined by the functions it performs and its composition, such as the use of multidisciplinary teams with a targeted case load.