

6 September 2021

Response from The Royal College of Ophthalmologists (RCOphth) to the [HEE Strategic Framework Call for Evidence](#)

1. Demographics and Disease

Within this drivers of change category, what do you believe are the key factors that will impact on workforce demand and supply over the next 15 years?

Factor A: Population demographics, coupled with new treatments

The fact the UK population is ageing will clearly place more pressure on our health and care system as a whole. But the strain this will place on ophthalmology services is more pronounced than many other specialties for two key reasons:

1. Ophthalmology services are concentrated on those aged 75+
2. New treatments have emerged in recent years that have placed greater demand on the ophthalmology workforce.

As highlighted in the August 2021 PHE report - [Atlas of variation in risk factors and healthcare for vision in England](#) – the “oldest old” are at greatest risk of sight loss. 79% of people living with sight loss are over the age of 64, while one in three aged 85 and over live with sight loss. As the UK population ages, the number of people living with sight loss is expected to increase by over a third in the next decade, reaching 2.7 million by 2030.

The implications for demand on the ophthalmology workforce are worrying, with PHE also noting the ‘*significant and increasing pressure on capacity for timely service provision, resulting in delays for follow-up appointments and increasing the risk of harm and adverse outcomes for patients, and the shortage of consultant and specialty training posts required to meet the increasing demand for specialist ophthalmic care*’.

In 2019/20, there were 9 million outpatient attendances for the five vision specialties, 9.4% of all outpatient attendances. When outpatient attendance is analysed by age, it becomes clear that as the UK population continues to age, this will place a proportionally greater strain on ophthalmology. NHS Digital data from 2019/20 shows that those aged 75 and over made up 19.6% of all outpatient attendances, but that figure for ophthalmology was almost double at 36.4%.

On top of the challenge presented by an ageing UK population, an exacerbating factor on workforce demand is that innovative new treatments have emerged in ophthalmology in recent years. For example, later stage “wet” age-related macular degeneration (AMD) can now be successfully managed with intravitreal injections of drugs such as ranibizumab, aflibercept and bevacizumab. This typically means though that patients will need eight injections a year for the rest of their life.

These linked factors of an ageing population, coupled with new treatments available to treat patients for many years, mean there are two key priorities when considering the future supply of the ophthalmology workforce. These will be detailed later in this submission, but can be summarised as:

- The need to expand the number of ophthalmologists by increasing the number of training places available.
- The need for innovative pathways to develop the MDT to deliver functions such as injectors and imaging technicians.

Factor B: Increasing prevalence of diabetes

Diabetes prevalence in the UK more than doubled in the two decades between 1996-2019, from 2.8% to 7.1%. This trend is likely to accelerate given high and rising levels of obesity – [Diabetes UK estimates](#) there will be 5.5 million people living with diabetes by 2030.

Mirroring this, diabetic retinopathy (DR), which leads to blindness if untreated, will continue to rise. A [2017 study](#) by London School of Hygiene and Tropical Medicine found that over half (54%) of people with Type 1 diabetes had DR, while the figure was 30% for those with type two diabetes.

[RCOphth estimates](#) that the population with DR is likely to increase by 50-80% over the next 20 years. The demand on ophthalmology services from rising levels of diabetes will therefore be significant, in terms of the time and resources that will need to be invested in screening, monitoring and treatment.

The exact burden this will place on services has a significant degree of uncertainty, although it will undoubtedly be large. Factors such as delay to diagnosis, available treatments and uptake of services will all play a major role.

In terms of workforce supply, advances in technology including AI and machine learning and the growing role of the multi-disciplinary team (MDT) mean that we need to quickly create new routes for screener graders and other imaging roles, as well as injectors, for example. With consultant oversight, these roles can be performed to a high standard by allied health professionals. This will also help to make ophthalmologist roles more satisfying and attractive, with a greater focus on more complex cases, service redesign and research.

Factor C: Workforce demographics contributing to lack of capacity to meet patient demand.

The [2018 RCOphth census](#) found that over a quarter (27%) of consultants were aged 55 and over. With a significant number of ophthalmologists therefore set to leave the workforce in the next decade, as demand continues to rise, workforce supply will become an even more pressing issue.

Our census found that this problem of filling consultant posts was already a big problem. Over three quarters (77%) of units in the UK reported unfilled consultant posts – equating to 14% of all consultant posts. Two thirds (67%) of units were relying on locums – a 52% jump in just two years since the 2016 census.

Ophthalmology is an extremely innovative specialty, and has made excellent use of the wider MDT to improve pathways and efficiencies. 86% of units that responded to the census relied on healthcare professionals such as nurses, optometrists and orthoptists to provide services traditionally delivered by medical staff.

Evidence from high performing units optimising multidisciplinary staff use suggest however that non-medical professionals can deliver a maximum of 20-30% of activity. This suggests the increasing

roles of multidisciplinary staff to deliver services will still need to be complemented by more ophthalmologists, in order to meet patient demand. We also must recognise the important role that ophthalmologists will play in training non-medical healthcare professionals and providing oversight and governance in developing more efficient services.

We are already seeing the consequences of not keeping up with patient demand. In 2017, the [RCOphth and British Ophthalmological Surveillance Unit found](#) **that patients were suffering permanent and severe visual loss due to health service-initiated delays – with up to 22 patients per month losing vision because of such delays.**

Delays have worsened further in recent years. [As of June 2021](#), there are now 559,451 patients in England waiting for ophthalmology services with an average wait time of 10.5 weeks – in 2018 and 2019 the median wait time never exceeded 8.2 weeks. There is significant regional variation here with patients in the Midlands waiting on average 12 weeks, and those in the North East and Yorkshire waiting 8.7 weeks. Across England there has been a significant rise in those waiting more than 18 weeks for treatment. There are 318.9 patients per 100,000 waiting more than 18 weeks, up 278% since June 2018.

To better meet rising demand, responses from eye units to our census suggested that an extra 230 consultant posts and 203 SAS posts were needed over the next two years.

Creating more consultants needs time and an increase in training posts. Following consultation with our Training Programme Directors, we believe there is capacity to train at least 20 more trainees nationwide annually (up to two extra trainees per region) for the next three years. There are currently 500 trainees and an additional 20 would represent an increase of 4%, which is considered sustainable within current capacity.

Training opportunities for SAS doctors are also an important part of workforce expansion. We believe that there should be more opportunities for SAS doctors to train and work towards CESR (certificate of eligibility for specialist registration) so that they can join the consultant workforce. The College sets the standards and promotes the development of high quality local ophthalmology training programmes, to provide the necessary support and opportunities for SAS doctors.

Greater efforts should also be made to retain the ophthalmology workforce, especially those nearing retirement who may decide to leave the workforce soon, but have significant experience and knowledge that should be retained. For example, offering more flexible job plans and increased involvement in education and training should be explored.

2. Public, People who need care and support, Patient and Carer Expectations

Factor A: The need for and expectation of continuous care for long-term conditions like glaucoma and AMD.

As highlighted under the demographics driver, the fact the UK population is ageing has an enormous impact on demand for ophthalmology services. RCOphth's 2017 [The Way Forward](#) report projected:

- A 22% rise in glaucoma cases in ten years, and 44% over 20 years.
- A 40% increase in people with 'soft' macular drusen over 20 years, reaching 3.8 million people in the UK
- Neo-vascular Age-related Macular Degeneration (AMD) cases to rise by 59% over 20 years
- An increase of 50% in cataract operations over the next 20 years

- Geographic atrophy cases to increase by 58% over 20 years

Innovation and service redesign are part of the solution, but ultimately capacity is the key issue – we need more ophthalmologists, more eye healthcare professionals and other staff and more space (both in hospitals and in community services). Developments in treatments mean that we are able to identify early and treat conditions like glaucoma and AMD for the rest of a patient’s life to prevent blindness.

This submission has already detailed the need to increase the number of ophthalmologists through more training places, but it is also important to train non-ophthalmologists to help deliver MDT working. Important progress has been made here through HEE’s Advanced Clinical Practice Programme and RCOphth’s Ophthalmic Practitioner Training. But there is also significant potential for focusing more on creating routes for roles that do not necessarily need graduates, such as imaging specialists and technicians.

Factor B: Greater use of digitally-enabled delivery of services, including remote monitoring, virtual clinics and remote consultations.

The pandemic has accelerated many trends in ophthalmology towards the greater use of digital technology to deliver services. This has the potential to help manage demand better and offer quicker care for patients, but the workforce may need support to develop new skills and the systems will need to be in place to interpret large volumes of data.

Remote examinations and consultations are becoming more common – developments like being able to examine an eye in 4k resolution using 5G broadband (as has been [piloted at Moorfields Eye Hospital](#)) will accelerate this trend.

Greater use of patient self-monitoring has also been seen during the pandemic. This is particularly appropriate for stable and chronic diseases such as dry AMD or diabetic macular oedema. Home vision testing can be carried out through a number of applications, and self-monitoring devices for patients with chronic retinal conditions have also proven successful.

Virtual clinics, [for example to treat glaucoma](#), have also become more common. These clinics separate out clinical measurements from clinical decision-making, and aim to reduce time spent in clinic by providing a “one-stop shop” where all tests can be performed on the day. Patients generally welcome the reduced waiting times, and they can help to increase capacity in a system struggling with backlogs.

The increasing use of digital technologies has the potential to reduce demand on ophthalmology services by increasing capacity in the system. Improving access to services may also however have the effect of increasing demand. Changes to the workforce will be needed in terms of more staff needed to provide data collection and analysis, as well as training existing staff how to best use new digital tools and analyse results.

More system-wide, progress is needed with rolling out electronic patient records to make using digital technologies more efficient. We also need to be wary of the challenge of digital exclusion – for example, if making greater use of home monitoring devices that require having a smartphone.

3. Socio-economic and Environmental Factors

Factor A: Health inequalities – socioeconomic deprivation and ethnicity are both strongly linked with poorer eye health

PHE's 2021 Atlas report, referenced earlier in this submission, identified that 'socioeconomic deprivation is both a cause and outcome of sight loss'. Living in a deprived area is associated with late presentation of glaucoma, greater likelihood of developing diabetes and diabetic retinopathy, and reduced likelihood of attending retinal screening.

PHE also found that in more deprived areas, 'there is a lack of public awareness of the health benefits of eye examinations combined with negative perceptions of optometry around the sale of spectacles, both of which affect people accessing services. There is also evidence of scarcity of optometry practices within areas of deprivation'.

The same PHE report also highlighted that ethnic minorities are more likely to experience poor eye health. For example, those of black African and Caribbean ethnicity are at a 4 to 8 times greater risk of developing the most common form of glaucoma, while people of south Asian and black African and Caribbean ethnicity have double the prevalence of clinically significant macular oedema and sight threatening diabetic retinopathy.

The reasons for these disparities are complex and likely to be linked. While there is no consensus on how to tackle them, they are likely to remain a contributing factor to sight loss, and continue to place greater demand on ophthalmology service in particular regions and communities.

4. Staff and Student/Trainee Expectations

Factor A: Expectations and morale of ophthalmology trainees

With demand growing, it is of course extremely important to retain the existing ophthalmology trainee workforce. The results of the [2021 GMC Training survey](#) were therefore worrying, where trainees in ophthalmology experienced the biggest increase in burnout of any specialty. Ophthalmologists in training were also notably less likely than other specialties to say they had a supportive working environment. Trainers in ophthalmology are also less satisfied than other specialties in terms of feeling valued/trusted by their board.

COVID-19 has significantly hampered training opportunities. Over half (53%) of ophthalmology trainees reported they had not been given additional opportunities to undertake the required number of practical procedures, notably higher than the 43.5% for all trainees. Similarly, when reflecting broadly on their experience of the pandemic, ophthalmology trainees were significantly less likely to say they developed clinical skills they would not otherwise have gained, and significantly more likely to say they worked in a service provision role that had no benefit at all for their training.

This balance between service provision and training opportunities is however a challenge that predates COVID-19. In the [RCOphth 2019 National Trainee Survey](#), when asked about their most negative training experiences, respondents cited the impact of increasing service provision on training opportunities. Other common negative experiences included poor surgical exposure in special interest rotations and difficulty in obtaining adequate cataract surgery numbers.

Given an increasing number of procedures are being carried out in the independent sector, one area where HEE and other stakeholders need to work together is to increase the training opportunities available in the independent sector. This will help to ensure a better training experience for

ophthalmologists in training, increasing the likelihood they are motivated to progress their training and ensuring they are equipped with the right skills.

Factor B: Changes to the curriculum

Forthcoming changes to the [curriculum for Ophthalmic Specialist Training \(OST\)](#) to come into force from 2023 have the potential to increase the supply of consultant ophthalmologists. This is because there will be greater flexibility enabling some trainees to complete training and obtain a Certificate of Completion of Training (CCT) in less time than it currently takes, with a minimum time of 5 and a half years.

The inclusion of special interest training within the training envelope will also shorten the time to commence consultant posts for many trainees. Following the curriculum approval RCOphth intends to apply for a further CCT in Ophthalmology without surgical training, and it is envisaged this would be completed in a shorter time frame. For the new curriculum to be implemented successfully, it will be important that HEE, through Heads of School and Training Programme Directors, supports and educates trainers locally to deliver and assess the outcomes for special interest training.

5. Science, Digital, Data and Technology (Including Genomics)

Factor A: The role of AI

As a very image-based specialty, there is significant potential for AI to support clinicians in monitoring and diagnosing disease. For example, [a consultation](#) was recently conducted by the UK National Screening Committee on using AI systems to grade images of the eye when undertaking annual screening for those living with diabetes.

Applications of AI in this way will have an important role to play in ophthalmology in the coming years, and could help to reduce pressure on the workforce, ensuring more clinical time is spent focusing on more complex cases, service redesign and research. The impact AI will have on demand is not clear-cut however, as scans being graded more quickly could increase workload. To improve efficiency, we also need to address the challenge of a lack of standardised imaging of scans which at present makes it difficult to share images across hospitals and different providers.

The ophthalmology workforce will also need training in using and understanding AI processes, and will need to work, together with patients, to make sure AI systems are effectively designed into pathways.

Factor B: The impact of genomics

The implementation of genomic medicine in the NHS will have the most [impact in ophthalmology](#) when treating those with rare diseases, where an early diagnosis will identify those who will benefit most from gene-directed management and treatment strategies.

Genomic testing is likely to affect some ophthalmic subspecialties more than others at present, such as paediatric ophthalmology, medical retina and neuro-ophthalmology. Therefore, these subspecialties will have a greater need to develop models of working with the new Genomic Medicine Service. This may include ordering of genomic tests, working within MDTs to facilitate

genomic variant interpretation, as well as working with genomic counsellors and nurses to deliver genomic results to patients.

But knowledge of new systems in place is essential for all ophthalmologists to ensure there are no delays in referral and access. In the longer term, it is likely that genomic medicine approaches will impact upon common disease and pharmacogenetics. For this reason, it will become increasingly important for clinicians to understand the capabilities and limitations of genomic approaches. This will need a comprehensive training programme across the UK. Local services will also need to consider how they upskill and utilise their non-medical healthcare professional staff such as nurses, orthoptists and optometrists.

It will be important to develop a small number of fellowships in this area to ensure ongoing training of clinicians following a path towards delivery of genomic medicine. It will be important too to have clarity on where such training should be provided, and how to set up accreditation of training centres.

Factor C: Data sharing

To enable more efficient care and increase the capacity in the system, more seamless data transfer between primary and secondary care is needed. High street optometrists often provide the first assessment of patients, undertaking digital imaging and Optical Coherence Tomography (OCT) scans. But this data is often not linked into hospital ophthalmologists, meaning that the potential of providing more virtual clinics (based on data collected by optometrists) is being stymied.

6. Service Models and Pandemic Recovery

Factor A: New models of care

As detailed in 1c, the wider MDT is already playing an important role in delivering ophthalmology services. As our 2018 census highlighted, the vast majority (86%) of eye care units relied on clinicians such as nurses, optometrists and orthoptists to provide services traditionally delivered by medical staff.

Evidence from high performing units optimising multidisciplinary staff use suggest that non-medical professionals can deliver a maximum of 20-30% of activity. Multidisciplinary staff, with consultant oversight, will continue to play an important role in helping meet patient demand in the coming years.

The [RCOphth's Cataract Services and Workforce Calculator Tool](#) provides an example of how we can help plan the delivery of more integrated services. It seeks to enable accurate multidisciplinary workforce planning, using a workforce calculator to plan the staff needed to deliver cataract services using community or hospital-based pathways for the patient population.

To reduce the pressure on hospital services and improve patient experience, more investment is needed to support the increasing use of high volume diagnostic and surgical centres. [Professor Sir Mike Richards' report for NHS England on Diagnostics Recovery and Renewal](#) laid out the case for greater use of community diagnostic hubs, including for ophthalmology services, especially in the context of delivering services during the pandemic. To make this work in ophthalmology, we need a stronger focus on the need to recruit technicians and other non-medical staff to support diagnostic

data collection. We also need to make more use of electronic patient records, and ensure that data and imaging platforms can be shared between primary and secondary care.

This integrated way of working fits in well with the move towards integrated care systems, and care being delivered in more innovative ways. To support these new models and ways of working, RCOphth and HEE jointly developed the [Ophthalmic Practitioner Training](#), and HEE is leading an [Advanced Clinical Practice Programme](#). This work must continue to progress to ensure we are bringing through the right non-medical staff to support the delivery of ophthalmology services, alongside expanding the number of ophthalmologists we are training.

We also need to focus on how to create routes for roles that may not need graduates, but are nonetheless crucial to helping meet patient demand – such as technicians and imaging specialists.

Factor B: Ability to keep elective care going in future COVID-19 waves

The ability to maintain elective care during any future wave of COVID-19 has two key implications for ophthalmology:

- The need to avoid future backlogs that increase the risk of patients suffering vision loss
- The need to ensure ophthalmologists in training develop the clinical skills to progress.

The cancellation of much elective care during the pandemic has led to huge backlogs in ophthalmology – some of these increased waiting times are summarised in 1c. Cataract surgery decreased by 40% and there was overall a 38% fall in those attending outpatients for the first time with a vision issue. These backlogs are going to be extremely challenging to clear given lack of workforce and estate capacity. It will be important that during any future COVID-19 waves, greater attention is paid to how to keep elective care, including ophthalmology services, functioning.

As highlighted in 3a, we also need to ensure that during any future COVID-19 waves we are not neglecting properly training our ophthalmology trainees. The 2021 GMC Training Survey showed that ophthalmologists in training experienced the biggest increase in burnout of any specialty, and were significantly less likely than others to say they developed clinical skills they would not otherwise have gained, and significantly more likely to say they worked in a service provision role that had no benefit at all for their training.

Demand and supply gaps over the next 15 years

Please provide details of where you feel the greatest workforce demand and supply gaps will be over the next 15 years. Where possible please be precise with regards to workforce groups/professions, services/pathways and place (geographic area), as well as timescales.

The gap between demand on the ophthalmology workforce and the supply of ophthalmologists and other staff needed will continue to widen over the next 15 years without action from policymakers. As PHE highlighted in its 2021 Atlas report, there are 2.5 ophthalmology and medical ophthalmology consultants per 100,000 population as of March 2021. While a welcome increase from the 1.7 figure in 2009, this is still well below the 3-3.5 consultants that the RCOphth has found is needed to deliver services in hospital units.

There is significant regional variation in the supply of ophthalmologists too. In London the rate is 3.1 per 100,000, but as low as 1.8 in the East of England and 2.2 in the Midlands. Unless efforts are

made to increase the supply in areas where the figure is low, we are likely to see increasing variation in service provision and growing health inequalities.

As detailed earlier in this submission, demand on ophthalmology services will continue to rise sharply over the next 15 years – primarily due to an ageing UK population. A strategic and long term approach to workforce planning is needed, including the role of overseas recruitment. In 2018, RCOphth estimated that an extra 203 consultant posts were needed within two years to meet the demand for services in England. But as of 2021, there had only been an increase of 118 posts since 2018.

There is also a need for more SAS doctors and specialty registrars to deliver ophthalmology services, but again supply is falling behind demand. RCOphth estimated in 2018 that 188 extra SAS posts were needed in England over the next two years, but that figure has increased by only 40.

Ambitions for the health and social care system

In 15 years' time, what one key thing do you hope to be able to say the social care and health system has achieved for people who need care and support, patients and the population served?

RCOphth believes that everyone should have access to timely high quality eye care. This will mean that delays have been reduced through investment in expanding the workforce and improving facilities, with care delivered where it is most convenient for patients – increasingly in community-based diagnostic hubs and remotely.

As highlighted earlier in this submission, in 2017 it was found that patients were suffering permanent and severe visual loss due to health service-initiated delays – with up to 22 patients per month losing vision because of such delays. Given we know that the proportion of patients waiting more than 18 weeks for treatment has almost trebled since 2018, we must take action now to ensure that the number of patients losing their vision is not far higher by 2036.

In 15 years' time, what one key thing do you hope to be able to say the health and social care system has achieved for its workforce, including students and trainees?

Greater capacity in the system will be the most important achievement, for current ophthalmologists and those in training. Through investment in workforce and facilities, ophthalmologists and other staff delivering eye care services will have a more rewarding career as they will be better able to meet patient need and expectations. Expanding workforce capacity will also make it easier to provide training opportunities, and enable NHS organisations to provide time for ophthalmologists to become involved in research, education and training to secure the future of safe and timely patient care.