Association of Optometrists, Fight for Sight, Primary Eyecare Services and Roche Products Ltd have provided financial support for this activity and have had editorial input and reviewed all associated output.

# Key Interventions to Transform Eye Care & Eye Health

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# Key Interventions to Transform Eye Care & Eye Health

## A review of eye care & eye health by PA Consulting on behalf of the Association of Optometrists, Fight for Sight, Primary Eyecare Services and Roche.

# Key Interventions to Transform Eye Care & Eye Health: This Report on a Page

## The Starting Point

Primary eye care makes a valuable contribution to the nation's Eye Care & Eye Health.

- Optometrists are trusted by patients to deal with eye health issues and are beginning to engage with a wider range of health issues.
- Through the NHS General Ophthalmic Services contract, they deliver at least £2.1bn of benefits for a cost to the NHS of £525m.

The optometry sector is open to playing an enhanced role in a transformed and integrated primary care sector.

## The Case for Change

There is an increasing mismatch between demand for Eye Care & Eye Health, and the NHS's capacity to meet it:

- **The most prevalent eye conditions* are predicted to increase in prevalence between now and 2032.**
- **Hospital Eye Services (HES) cannot meet current demand.** Waiting lists and times have been growing for more than a decade. Every delay risks worsening a major eye condition and ultimately irreversible sight loss.
- **Demand for HES is growing faster than ophthalmology workforce capacity,** and only 24% of eye units believe they have enough consultants to meet current demand.
- **There is significant variation in activity and outcomes.** Some areas refer patients to HES three times more than others. There is a 26-fold difference between areas in the rates of people registered blind or partially-sighted.

## Four Interventions Proposed

1. National roll-out of **Community Urgent Eye Services ("CUES") delivery model**
2. National roll-out of the **Integrated Glaucoma Pathway**
3. National roll-out of the **Integrated Cataract Pathway**
4. **Transforming Optical Coherence Tomography ("OCT") use across all settings and harnessing its continued technological advance.**

## Annual Benefits

**1.9m** **Reduced NHS Appointments (HES, A&E & GP)**

**£98m** **Net direct cost savings to the NHS**

**Faster, more convenient access to integrated Eye Care & Eye Health for patients. Maximising skills & opportunities for professionals. Better use of technology & data.**

## Recommendations to Realise these Opportunities and Benefits

### ACT LOCALLY

Local NHS organisations should consider the benefits which these interventions could provide to their Eye Care & Eye Health services – and therefore ultimately to their patients and citizens. This should then lead to multi-stakeholder, local action to adopt the interventions, tailored to the local community and environment.

### SUPPORT NATIONALLY

Government, national NHS bodies, professional bodies and others should consider how best to strongly facilitate such change at local level – including through providing leadership and setting expectations about what patients should expect from the services, and in signalling clearly that such local innovation is supported at the national level.

### THINK BIG

These changes can lay the foundations for broader changes to the Eye Care & Eye Health ecosystem, including the transformational benefits of technology for which ophthalmology seems particularly well suited. A National Plan for Eye Care & Eye Health may have a role to play in first articulating – and then delivering – this wider transformational change.

### CATALYSE NOW

The commissioning partners for this report are clear in calling for a national commitment towards such a plan, as well as taking an ongoing role to encourage and support partnership-based working with Government, national and local NHS leaders, professional associations, patient representative groups and others.



*Glaucoma, cataract wet age-related macular degeneration and diabetic retinopathy. For further information and sources see page 11.

# Contents

# 1

# Background and Context

# Background and Context

## Background

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.

Each organisation is committed to seeing government, the NHS and wider stakeholders embrace the strategic case for change, based on both clinical and socio-economic impact. That case has never been stronger. This report presents a strategic argument for why change is necessary and – most importantly given pressures on the NHS – what practical steps could be taken to optimise the role of high street optometry in end-to-end Eye Care & Eye Health, and so make a meaningful difference to the lives of patients.

Now is the moment to make the case to Government (including healthcare and financial policy makers as part of the new UK Government and four nations counterparts), and the health care sector (including clinical leaders, patient groups and the wider public), about how eye health and eye care can be transformed. The basis for estimating benefits from such a transformation is both eye health per se and the significant, knock-on wider socio-economic benefits of improved eye health.

## About this report

This report presents a strategic argument for why change is necessary and what it could achieve, including:

- The Case for Change
- An analysis of the economic value of the current General Ophthalmic Services (GOS) arrangements; and
- Four interventions which could improve eye care services and patient outcomes, together with the anticipated benefits (including economic benefits) of each.

***This report is not intended as a definitive view on either the range of interventions which could be undertaken to improve eye care, or the precise impact (economic or otherwise) of any specific intervention. Rather, it is intended to show that there are a number of specific, practical steps which government and health services can take which would be simultaneously advantageous to patients, staff, NHS organisations, and the wider economy and society. Such changes would need to be defined in more detail through subsequent work, and a more detailed cost/benefit analysis conducted as part of a HM Treasury business case process.***

## Note on Methodology:

This report analyses the economic impact of four interventions (set out at page 19 below). To analyse the economic benefit of each intervention, we first developed an underlying logic model which translated the intervention into quantifiable benefits, including:

- Shifting activity into community eye care from other – including Hospital Eye Services, GP surgeries and A&E Departments; and/or
- Removing activity from those same, other services.

Each intervention was then quantified in activity terms, using published evidence or (where required) expert assumptions to determine the number of appointments which could either be shifted in setting, removed as no longer required, or both. Appointment numbers were then multiplied by the cost to the NHS for each type of appointment to give a total benefit. Net benefits were then derived by deducting the cost of the service (assuming national rollout).

It is important to note that this economic analysis is set within the context of wider benefits which are highly important but difficult to quantify. These include greater convenience for patients, reduced anxiety from resolving issues more quickly, and increased staff satisfaction from relieving operational pressures (in hospital settings) and providing a wider range of clinical work (in community settings).

# 2

# Analysing the Economic Value of General Ophthalmic Services (GOS)

# The High Street-based optometry sector plays a well-established role in delivering General Ophthalmic Services for the NHS. The benefits of GOS in England are at least £2.09bn on a total cost of £525m.

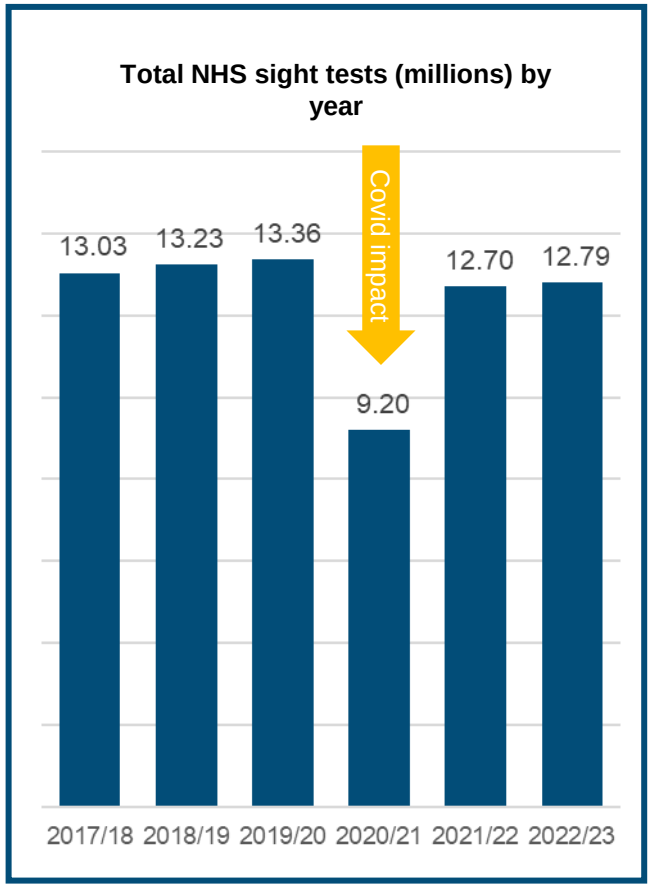
## General Ophthalmic Services in numbers
(England, 2022/23 unless stated)

**13,705**
**Optometrists**

**12.79m**
**NHS sight tests**

**425,000**
**Home visits**

**£525m**
**Cost of the service to the NHS**




## General Ophthalmic Services: Costs and Benefits

**Costs £525m (England)**

Total spending on General Ophthalmic Services (GOS) was approximately £525 million in England in 2022/23.

This includes the costs of NHS sight and domiciliary tests, as well as the cost of optical vouchers provided.

**Delivering…**

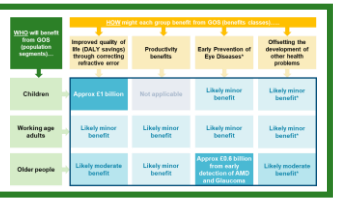
**Benefits at least £2,092m (England)**

Anticipated benefits are £2.09 billion yearly social and economic benefit of providing GOS services. This includes:

- Approximately £1.63 billion equivalent of DALY* savings from correcting refractive error in children and young people; and
- Approximately £0.46 billion from early detection of AMD and Glaucoma in older people.

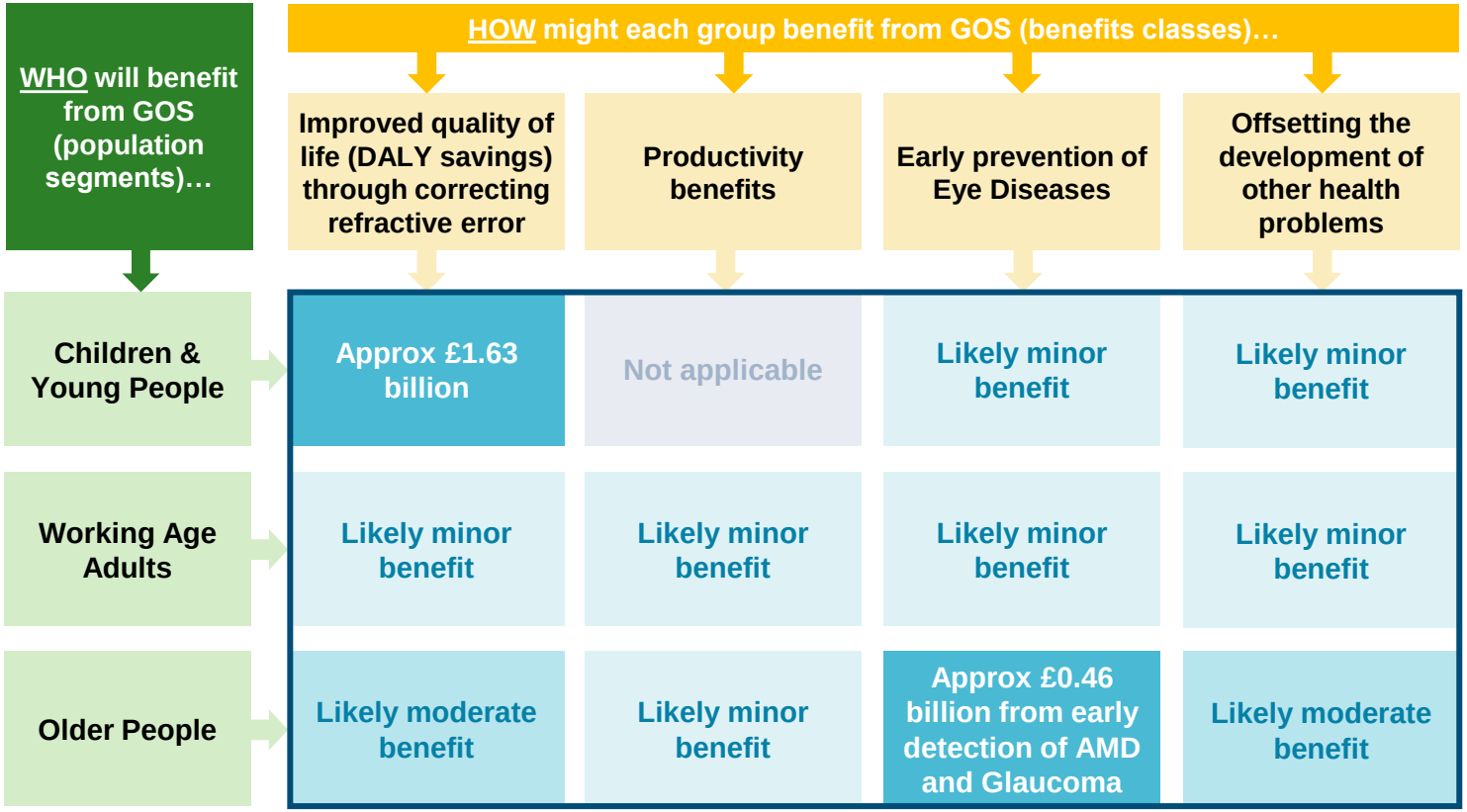
Dividing by the total costs, shows £3.98 benefit for every £1 spent (based on these areas of benefits alone).

**However, we know that this benefits picture is incomplete, meaning that the true scale of benefits is greater**
**(see next page)**



*The overall burden of disease is assessed using the disability-adjusted life year (DALY), a time-based measure that combines years of life lost due to premature mortality and years of life lost due to time lived in states of less than full health, or years of healthy life lost due to disability. One DALY represents the loss of the equivalent of one year of full health. Using DALYs, the burden of diseases that cause premature death but little disability (such as drowning or measles) can be compared to that of diseases that do not cause death but do cause disability (such as cataract causing blindness).(Source – WHO).

# Considering the varying ways in which three specific population groups benefit from GOS offers a framework for analysing the true range and scale of the benefits which it provides.



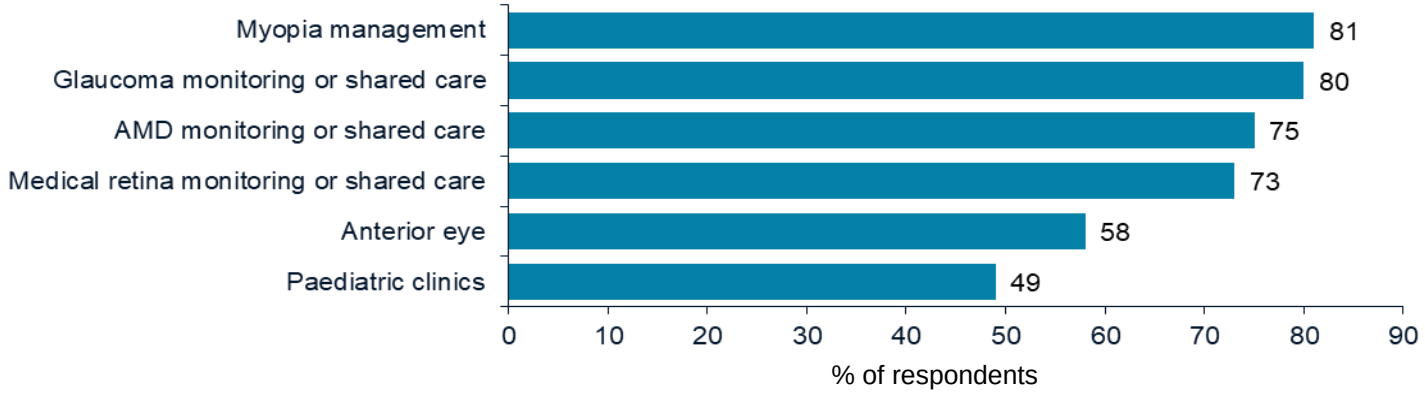

Anticipated high economic benefit from GOS
Anticipated moderate economic benefit from GOS
Anticipated minor economic benefit from GOS

- The diagram opposite sets out a conceptual framework for thinking about the benefits which GOS provides.
- Each of the three population segments (children, working age, older people) will to a varying degree experience each of the four types of benefit (DALY savings through refractive correction, productivity benefits, prevention of eye disease and offsetting the development of other health conditions). This gives a total of twelve 'benefits buckets' of variable sizes.
- Two of these benefits boxes have been quantified – £1.63bn of DALY benefit from correcting refractive error for Children & Young People and £0.46bn from early detection of AMD and Glaucoma in Older People.
- **For those benefits areas (ten of the 12) which have not been quantified, the PA Consulting team have estimated benefits by approximate order of magnitude (high / moderate / minor benefit).** This assessment is based on (i) size of population affected; (ii) likely scale of benefit per person; and (iii) existing data points from which to extrapolate.
- For example, in relation to offsetting costs elsewhere in the health and care system, benefits include:
  - *Falls: Approximately £25 million cost in UK in 2008 (~£39m at 2024 prices) from falls due to partial sightedness. It is expected that free sight tests could play a role in reducing these falls.*
  - *Mental Health: 1 in 4 people with vision loss report anxiety and / or depression. Access to sight testing & professional eye care will aid in reducing mental stress / burden associated with vision loss.*

# However, whilst both the economic and patient benefits of GOS are clear, it is also clear that the optometry sector has both the willingness and the capability to contribute significantly more.

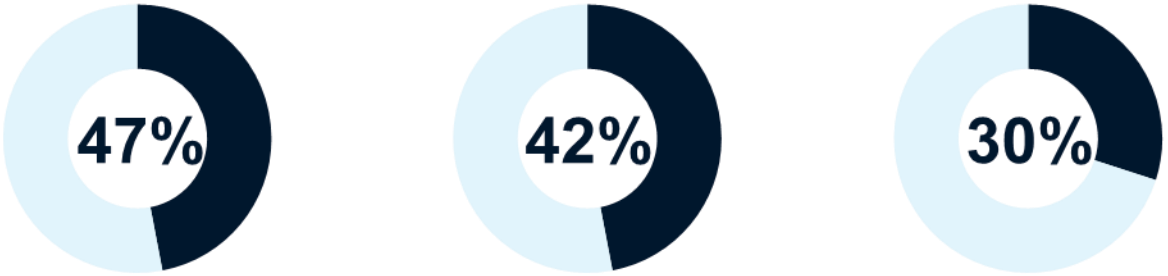
## AOP members' views on the future community services offer…

**What services will optometry need to offer in the community in the future - % response (survey of 2094 AOP members, 2023)**




## Career goals of AOP members over the next two years…

**(survey of 2,094 AOP members, 2023 )**




**The community optometry sector has the capacity to take on additional work:**

- AOP estimates that there are around 8,223 FTE optometrists in England (based on 13,705 registered optometrists working an average of 0.6WTE).
- The four interventions analysed in this paper suggest that a total of 752,867 appointments could be shifted from hospital eye services to community optometry. This would represent just **92 additional appointments per optometrist per year, or around two per working week**.

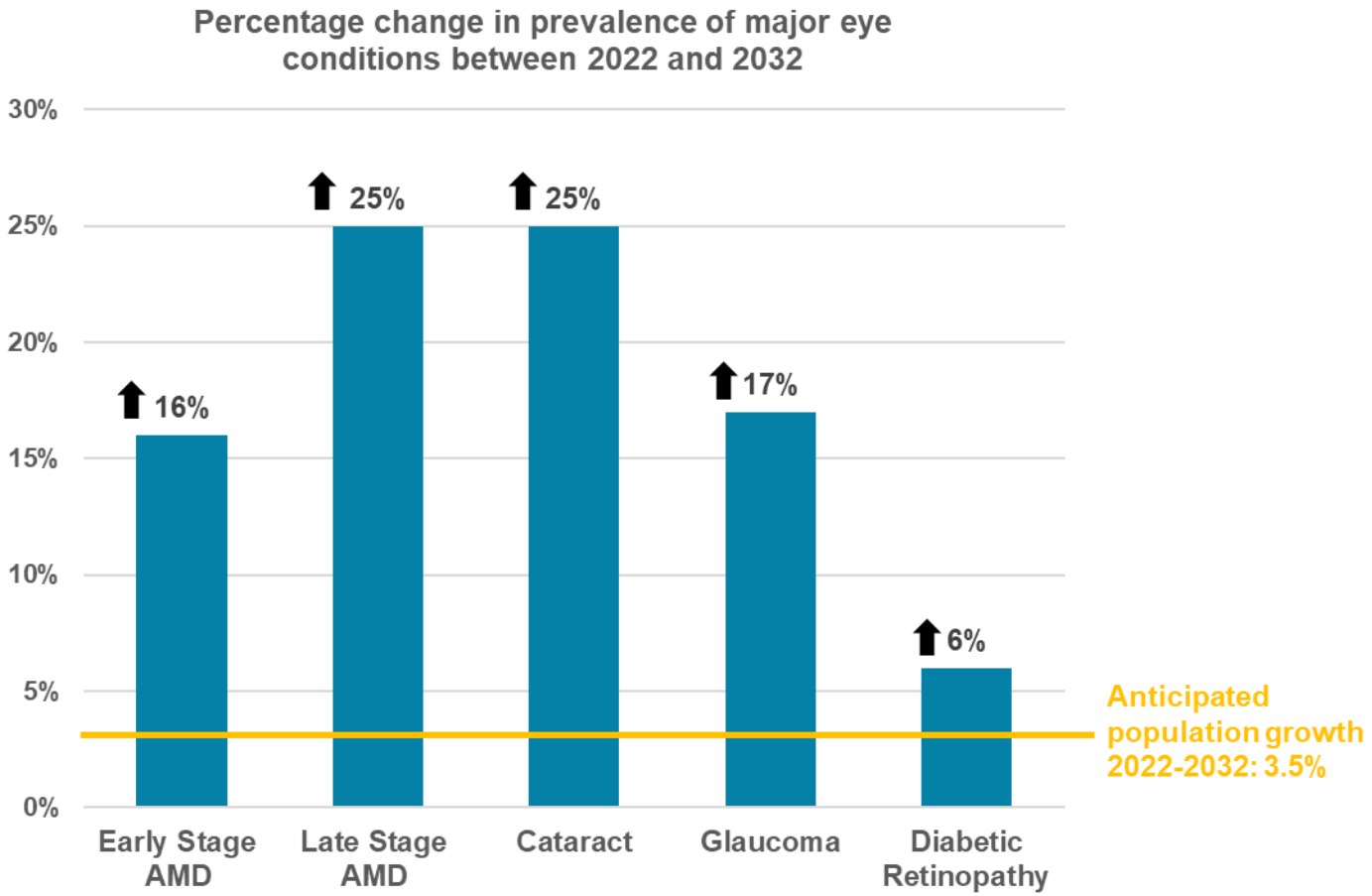
**Optometrists are keen to broaden their skills and the range of care which they provide to their patients:**

- A study undertaken by Research by Design on behalf of AOP suggests that **47% of optometrists are keen to enhance their skills over the next two years, and 42% are intent on gaining additional qualifications.** This is in line with wider research which noted that 40% of General Optical Council registered professionals listed 'gain additional qualifications / skills' as a proposed career development over the next 12-24 months (General Optical Council, Registrant Workforce and Perceptions Survey 2023).
- **AOP members were also asked what services would need to be offered in the community in future – providing a 'frontline view' of changing patient needs and demand. The majority of top responses focussed on community care for severe and chronic eye conditions** – including glaucoma monitoring and shared care, AMD monitoring and shared care, medical retina monitoring and shared care and myopia management.

# 3

## The Case for Change

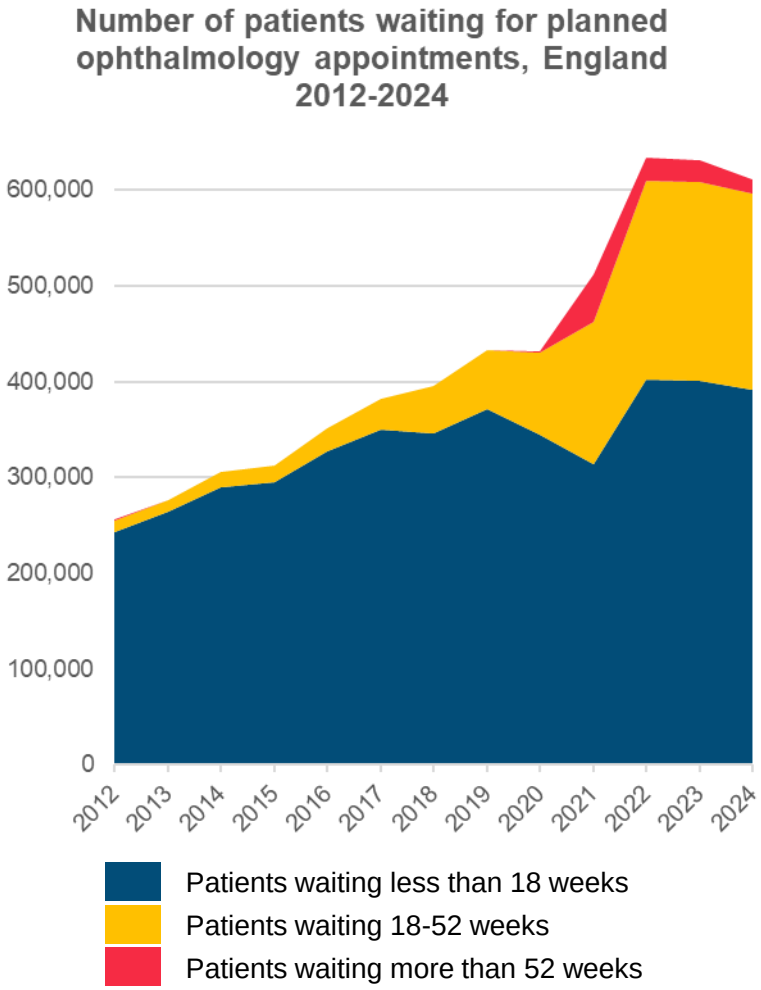
# The NHS faces high and rising demand for eye care services. Prevalence of major eye conditions is expected to grow by 25% over 2022-32, seven times faster than overall population growth.

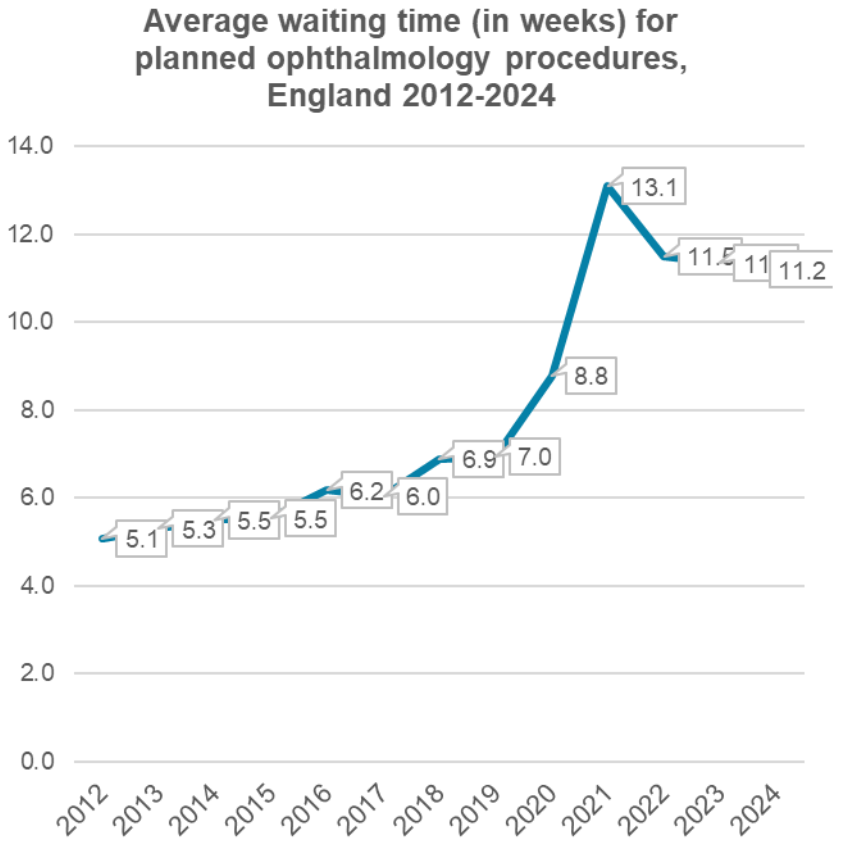



- Modelling undertaken for Fight for Sight suggests that **major eye conditions** (AMD, cataract, glaucoma and diabetic retinopathy – see opposite) **are predicted to increase in prevalence between now and 2032.**
- The greatest increases are in late-stage AMD and cataract, both of which are anticipated to rise by around one quarter over the next decade (late-stage AMD from 653,000-815,000 people and cataract from 725,000-904,000 people).
- Glaucoma is expected to increase by 17% (from 718,000-843,000), early-stage AMD by 16% (from 3m-3.49m people) and diabetic retinopathy by 6% (from 1.3-1.41m people).
- All of these conditions are therefore forecast to increase by more than overall population growth over the same period of time (3.5%) – up to seven times greater in the case of late-stage AMD and cataract.
- This growth is driven primarily by population ageing. The population of people aged over 80 is anticipated to grow by around 30% during this time.
- ***Most major eye conditions will be significantly more prevalent in 2032 than they are today. It is therefore essential that we work differently if we are to manage this rising demand effectively.***

***Sources:*** *LSE analysis on behalf of Fight for Sight. ONS. PA Consulting analysis.*

# Hospital Eye Services cannot meet current demand; waiting lists & times for hospital eye care have been growing for over a decade, were significantly worsened by Covid and remain close to their peak.



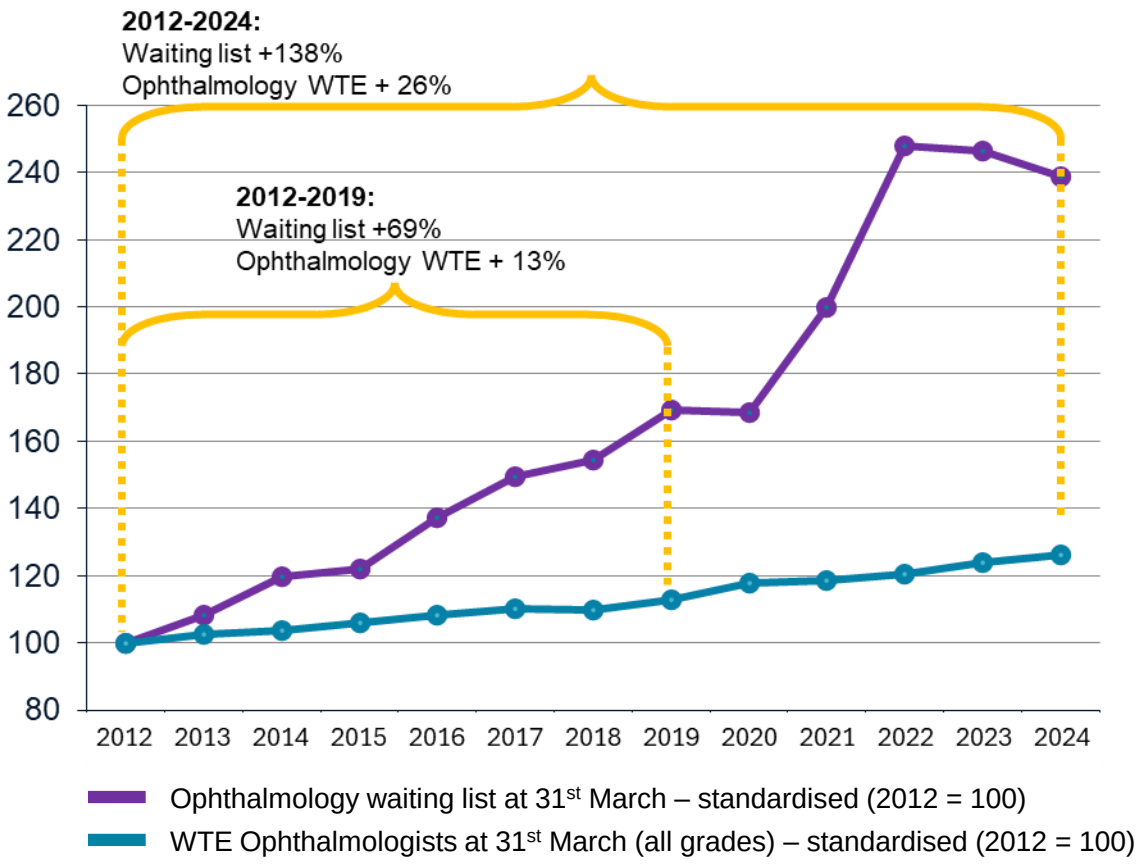




- **The number of people waiting for planned ophthalmology treatment in the English NHS has been increasing steadily since 2012, even before the pandemic.** The total waiting list was 256,000 in 2012, rising to 431,000 in 2020, an increase of 175,000 or 68%.
- For individual patients, this accumulating demand means that they are waiting longer to be seen. The average waiting time for a first appointment increased from 5.1 to 8.8 weeks from 2012-2020 (before the pandemic), before peaking at 13.1 weeks in 2021. It has since reduced slightly but is still significantly higher than pre-pandemic.
- This has significant implications for patient outcomes and clinical risk. **Every delay risks worsening a major eye condition and ultimately sight loss, with devastating consequences for the patient and those close to them.** The number of people who in March 2024 had waited more than 18 weeks is 219,000, and the pandemic has now seen the return of patients waiting more than one year (over 15000 people in March 2024).
- Furthermore, this analysis only covers first appointments. Delays to follow-up appointments can be equally damaging to patient outcomes.

***Source:*** *NHS England statistics*

# Demand is growing many times faster than medical workforce capacity, and only 24% of eye units believe they have enough consultants to meet current demand.

**Relative growth in Hospital Eye Services workforce and waiting lists, 2012-2024**




***Sources:*** *NHS England Performance statistics, NHS workforce statistics, PA analysis.*

- **Workforce capacity in hospital eye services has fallen significantly behind demand growth.** For example, the number of ophthalmologists (FTE, of all grades) has grown by 26% over the last 12 years (from 2012 to 2024). However, the ophthalmology waiting list has grown by 138% during the same time. These differences were increasing even before the pandemic.
- **This is reinforced by clinicians' own views about capacity in their services.** Responses to the Royal College of Ophthalmology workforce census (2022, published 2023), include that only 24% of eye units believe they have enough consultants to meet current demand. Numbers of SAS doctors and trainees are also insufficient in the majority of units.
- **Future workforce trends suggest that shortages will become more acute as capacity is eroded – even before accounting for increased patient demand**. A quarter (25%) of consultants plan to leave the ophthalmology workforce over the next five years. The majority of these intend to retire, but others intend to leave the NHS for independent sector providers or for roles outside ophthalmology. 30% of ophthalmology consultants are within ten years of retirement age.
- **Changes to working patterns may be further eroding existing capacity.** In the same survey, a majority (61%) of units reported a cut in the number of sessions undertaken by consultants under retirement age.
- **As well as issues for the future, these workforce challenges are now starting to impact current service performance.** Three quarters (74%) of units report they are growing more concerned about the impact of outpatient backlogs due to shortages in staffing capacity.

# The impact of these challenges is not only felt in the NHS; the cost of visual impairment is anticipated to rise over 2020-32 by a quarter to £33.5bn. Most of the costs fall outside the health and care system.

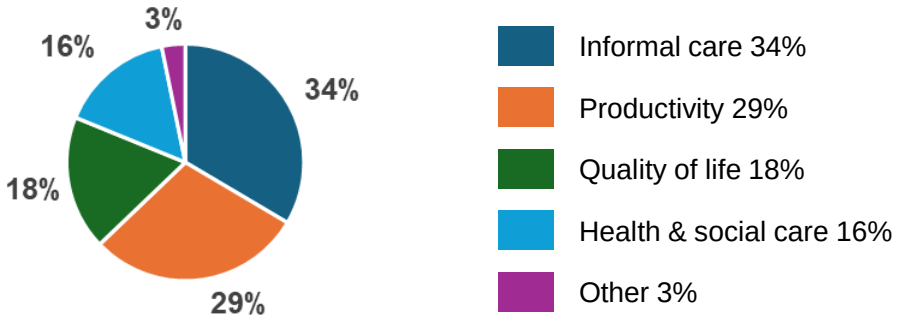
**Total cost of visual impairment in the UK**

**£26.5bn**
**in 2020**

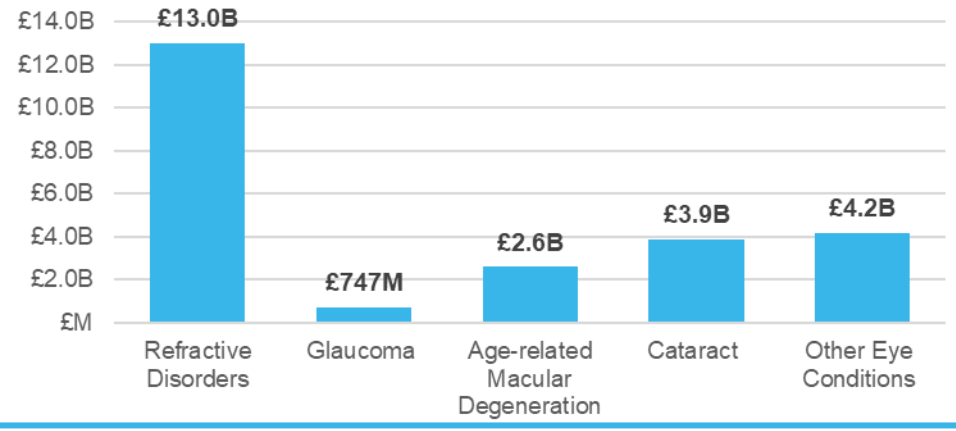
**rising to…**

**£33.5bn**
**in 2032**

**These costs play out across the economy and society. 'Direct' costs to the health and care system are only around one sixth of the total.**




**These costs are also unevenly distributed by cause. Refractive disorders are responsible for more than half of total costs – due to the number of people affected and wider age range in this patient group.**



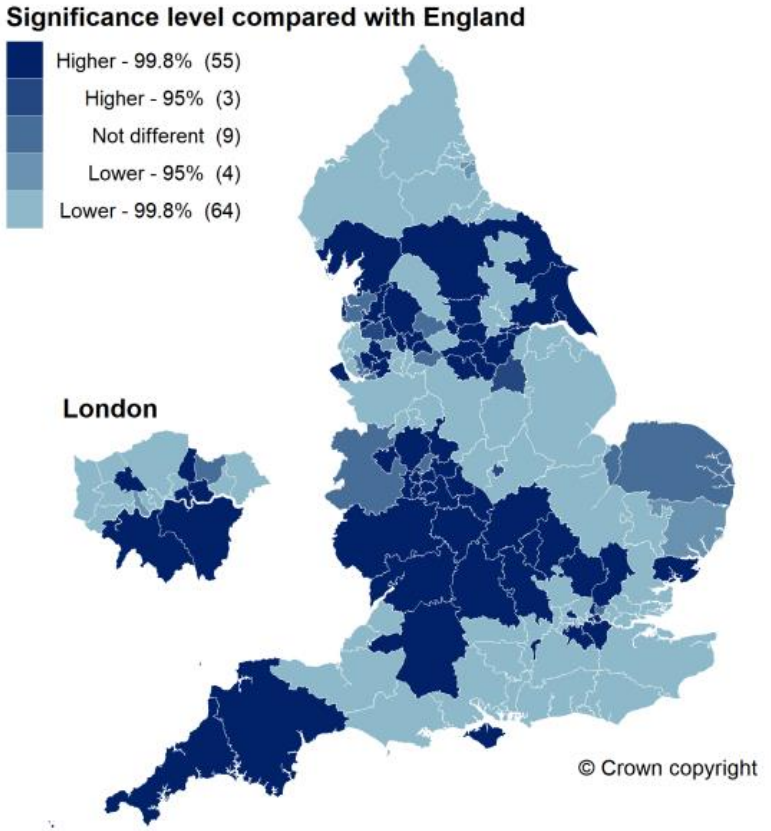

- Analysis commissioned by Fight for Sight indicates that the **total cost of visual impairment in the UK is projected to rise from £26.5bn in 2020 to £33.5bn in 2032 (an increase of 26%).**
- **The majority of these costs (84%) fall outside the health and care system,** with the most significant impacts being on informal care requirements (34% of the total) and lost productivity (29% of the total).
- **Furthermore, sight loss also has a significant detrimental impact on people's social and personal circumstances and wellbeing.** For example:
  - Financial impact: 41% of people surveyed felt that their condition had a negative impact on their financial security.
  - Wellbeing impact: Overall quality of life for people with severe sight loss is worse than for people with other severe physical and mental health conditions.
- The large population with refractive disorders means that they are responsible for just under half of total costs. However, per-person costs – and personal impact – are significantly greater for those with more severe eye conditions. These conditions are also the focus of NHS hospital eye activity, and of the interventions set out in part five of this paper.



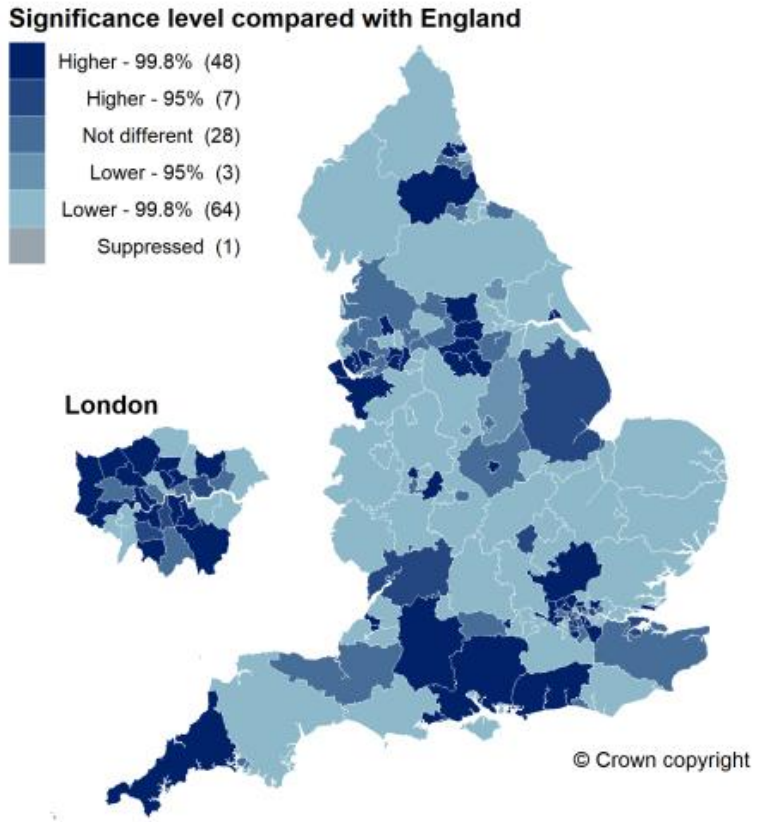

***Source:*** *LSE analysis on behalf of Fight for Sight*

# Currently there is significant variation in both eye care activity and outcomes. Some areas refer patients to HES three times more than others, and there is a 26-fold difference between areas in the rate of people registered blind or partially-sighted.

**Variation in activity:** Rate of all vision outpatient first attendances by clinical commissioning group (2019/20)



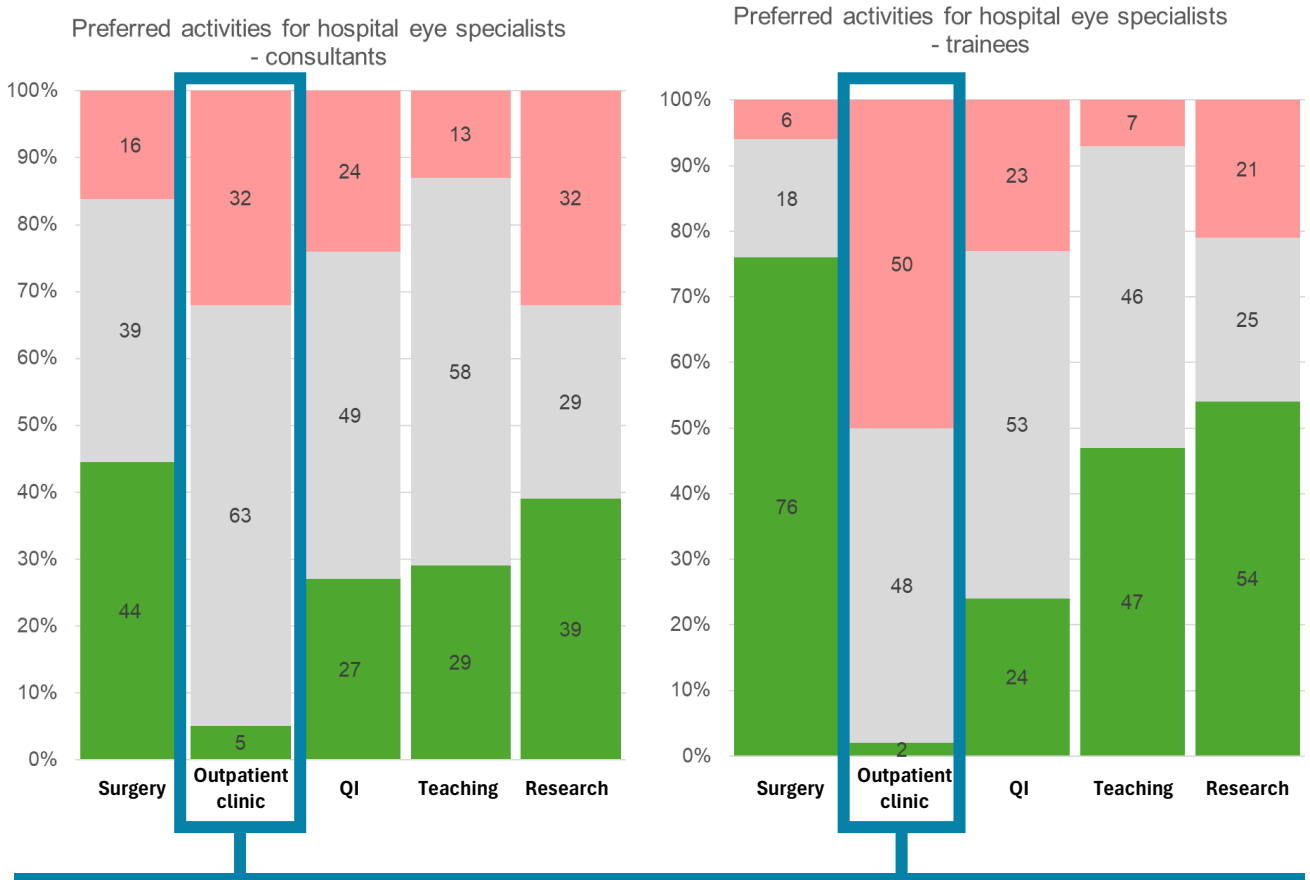

**Variation in outcomes:** Rate of registered blind or partially sighted people aged 75 years and over by upper-tier local authority (2019/20)




***Source:*** *Atlas of variation in risk factors and healthcare for vision in England (2021)*

- **There is significant variation in rates of first outpatient attendances (a proxy for overall outpatient demand).** Rates vary from 2066 to 8027 per 100,000 people – a 3.5-fold difference across areas. **This suggests opportunities to reduce demand through new ways of working and adopting best practice from other areas.** This will be particularly important as high referrals add to pressure on services, leading to increased backlogs and delayed care.
- **There is also significant and unwarranted variation in outcomes.** In 2019/20 there was a 26.2-fold difference between Local Authority areas in the rate of registered blind or partially sighted people aged 75 years and over (from 393 to 10,278 per 100,000 population). Although there are many potential reasons for this (including constrained service capacity, variation in registration uptake and variation in population profiles), this level of variation suggests that **there is likely to be unmet need in many areas, particularly those with lower registrations which are not explained by population characteristics.**
- Furthermore, the lack of any apparent correlation between these maps suggests **a mis-match between activity and demand – presenting an opportunity to change services to best meet the needs to those who need them most.**

# Increasing the role of optometrists and primary eye care will benefit Hospital Eye Services, relieving pressure on services and allowing clinicians to focus on the most important activities.




**Both consultants and trainees would like to spend less time in outpatient clinics, and more time on surgery, teaching and research**

***Source:*** *Royal College of Ophthalmology workforce census (2023)*

- According to the Royal College of Ophthalmology workforce census (2022, published 2023), **only 5% of consultant ophthalmologists want to spend more of their time on outpatient clinics. More than five times as many (32%) want to spend less time on them.**
- Figures for trainees are even more stark. **Only 2% of trainees want to spend more time on outpatient clinics, but 50% want to spend less time on them.**
- Spending less time on outpatient clinics would give hospital specialists more time for surgery, quality improvement, teaching and research. There was a particular desire – from both consultants and (especially) trainees – to spend more time on surgery.
- **From the point of view of staff satisfaction and development therefore, this suggests that shifting the balance of total eye care activity – such that some current hospital outpatient activity can be undertaken in community settings – would be viewed positively by both hospital and community-based professionals.**

Preference to do more (or start doing, if not currently doing)
Preference to do about the same
Preference to do less (or no desire to start, if not currently doing)

# Advancing technology can catalyse new ways of working, allowing more care to be provided in community settings, and community-based clinicians to get support from hospital-based specialists.

## Eyecare technology trends (selected)

### Advanced diagnostics

**Optical Coherence Tomography (OCT)** scanners are becoming both more prevalent in the community and more advanced – transforming the range of diagnostic and monitoring activities which can be carried out outside hospitals. In-built AI (see below) can further enhance these capabilities.

This advanced technology is now widespread in optometry practice and may offset increases in technology-enabled self-monitoring and testing.

### Networked health systems

**Telehealth** – including remote consultation and advice and guidance – has become established since the pandemic. It has the potential to transform both access to services for patients (especially in remote areas) and the clinical range and scope of optometry.

Future developments are likely to include **automated remote monitoring** for an increasing range of eye conditions, for example through smartphone applications or new technologies such as smart contact lenses.

### Artificial Intelligence

AI algorithms can analyse eye images to **detect signs of eye disease** such as diabetic retinopathy and age-related macular degeneration. These algorithms can provide rapid analysis and results, in order to inform diagnosis and treatment, and so support optometrists to deliver consultant level care in a primary care setting.

AI is also being used to **predict the progression of eye diseases**, using analysis of past scans to predict how diseases will progress in the future, in order to inform treatment planning. This aspect of AI could also support optometrists to manage clinical risk

## Implications for the future of primary eye care

- **Technology provides a clear opportunity to provide more advanced care closer to patients,** which would previously have been provided in hospitals – including both diagnosis and monitoring.
- **There is a clear opportunity to advance clinical skills – and therefore careers – through adoption of new technology in optometry practices,** as well as to automate more routine elements of practice. In future, optometrists will be able to spend more time with a wider range of patients and provide a more comprehensive eye health and eye care service.

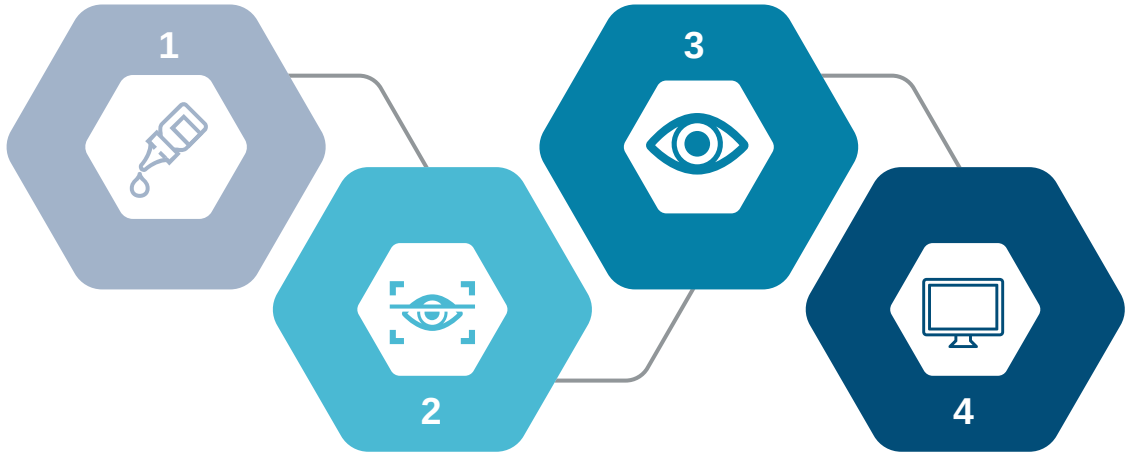
# 4

## Potential Changes and their Impact

# Discussions with the commissioning partners have identified four interventions for eye care transformation which can deliver better outcomes for patients, increased staff satisfaction, and financial and operational benefits for the NHS.

**National roll-out of Community Urgent Eyecare Services (CUES)** using the skills of primary eye care practitioners to triage, manage and prioritise patients presenting with urgent and/or minor eye conditions.

**National roll-out of the integrated cataract pathway.** Primary care optometrists (i) confirm eligibility and patient willingness for surgery; and (ii) check for and treat any postoperative complications, assess patient outcomes, collect information for audit and ascertain patient satisfaction.




**National roll-out of the integrated glaucoma pathway.** Including (i) Glaucoma Referral Refinement (GRR) for patients with signs of suspected glaucoma; (ii) Glaucoma Enhanced Referrals (GERS) confirming the risk of glaucoma or ocular hypertension; and (iii) Glaucoma Monitoring (GM) to prevent glaucoma development or exacerbation of existing glaucoma.

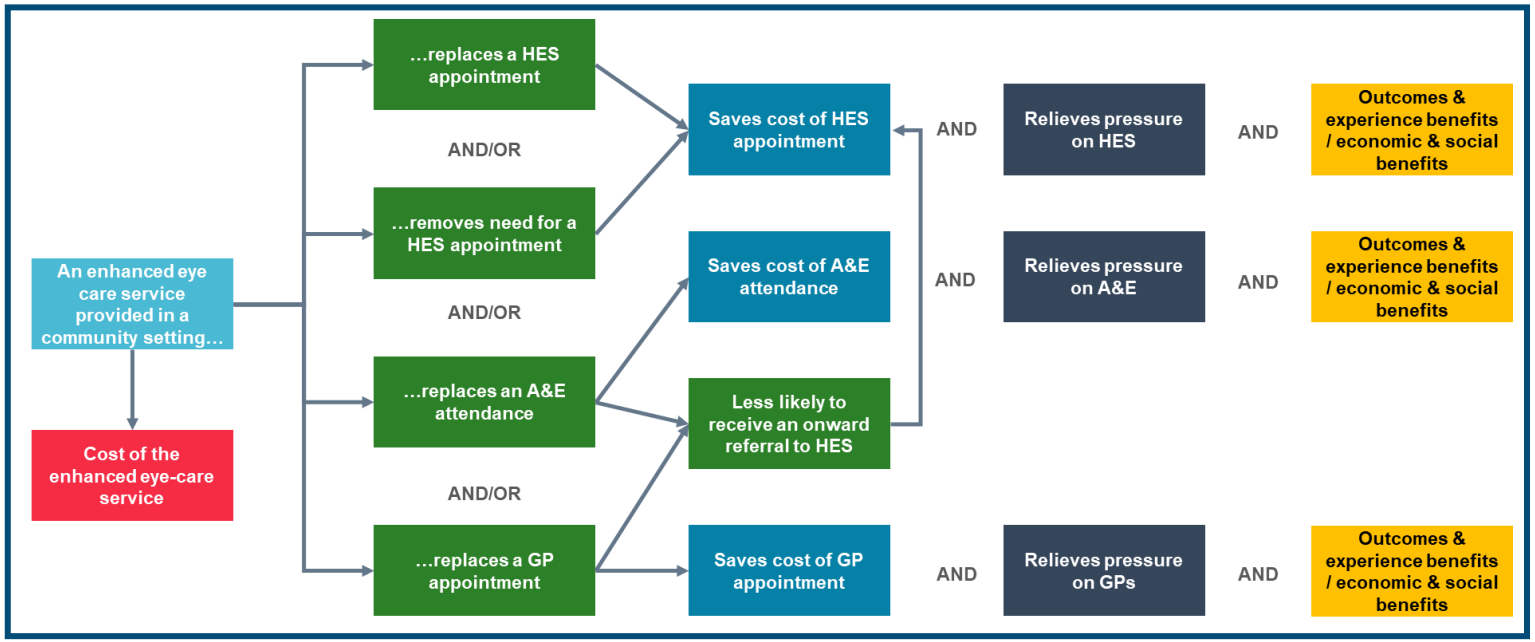
**Transforming the potential of OCT in community settings and harnessing its continued technological advance.** By providing OCT in community settings, patients can receive more advanced eye care closer to home, reducing the need for hospital visits and easing the burden on secondary care services.

**Each of these interventions is analysed over the following pages, including service costs and net financial benefit (both on an annual basis, and assuming national roll-out). Specific implementation costs have not been calculated. However, in all cases implementation costs (and risk) will be low, as these are relatively simple service changes with no significant investments required. Furthermore, all of these interventions have at least some existing proof points within the NHS. If managed correctly, interventions such as these have the potential to deliver better outcomes for patients, increased staff satisfaction, and both financial and operational benefits for the NHS. They also lay the groundwork for more radical future transformation as technology evolves.**

# A simplified logic model underpins the approach to estimating the impact of each intervention.

Modelling of all interventions is underpinned by the same overarching logic model. This suggest that each intervention realises two types of benefit – to a varying degree depending on the intervention:

1. **Economic and activity benefit (reducing pressure on other services):**
   - ***Shifting activity*** into community eye care from (sometimes) higher-cost and (always) more under-pressure services – including hospital eye care services, GP surgeries and A&E Departments; **AND/OR**
   - ***Removing activity*** from those same, other services.




These changes in activity will then have consequential economic benefits, as well as relieving pressure on the services from which activity is diverted or reduced. For example:

- **Reduction in A&E Visits:** Patients can access eye care within the community, reducing the demand on A&E departments and freeing up their capacity. The cost of a primary eye care appointment is less than an A&E attendance, and patients are also less likely to need onward referral to hospital eye services.
- **Reduction in GP Visits:** By receiving eye care in optometry practices, patients decrease the strain on GP services.
- **Elimination of Hospital Appointments:** Community-based care eliminates the need for hospital visits by providing necessary services locally.
- **Accurate Diagnosis in Primary Care:** Enhanced diagnostic capabilities in primary care settings reduce unnecessary hospital referrals, ensuring that only those who truly need specialist care are sent to hospitals.

2. **Outcomes and experience benefits for patients, staff and wider society**

These benefits include greater convenience for patients, reduced anxiety from resolving issues more quickly, and increased staff satisfaction from a wider range of clinical work.

# Intervention 1: National roll-out of Community Urgent Eyecare Services (CUES) has the potential to reduce appointments in hospital eye services by ~200,000, in A&E by ~240,000, and in GPs by ~425,000 per year, while also realising financial benefit.


## Description of the intervention

Community Urgent Eyecare Services (CUES) uses the skills of primary eye care practitioners to triage, manage and prioritise patients presenting with urgent and/or minor eye conditions.

The examination provides a timely assessment of the needs of a patient presenting with an eye condition. Management will be maintained within the primary care setting for as many patients as possible – avoiding unnecessary referrals to hospital services.

Where referral to secondary care is required, it will be to a suitable specialist with appropriate urgency.

**We have modelled the impact and benefits of rolling out CUES at a national level (across England), to manage and prioritise patients with urgent and/or minor eye conditions.**

## Essential pre-requisites for successful implementation

- Ability to scale up activity of CUES
- Patient awareness of CUES service, to avoid patients attending A&E and GP
- Training optometrists and ensuring that there is the availability of optometrists who are independent prescribers to provide prescriptions at CUES services.

## Anticipated benefits

### Benefits to patients

- ✓ **Access is faster** (immediate / same day vs hours to wait in A&E, or hours/days to wait for GP).
- ✓ **Access is more convenient** (on High Street).
- ✓ **Higher chance of faster resolution** (treatment first time).

### Benefits to the NHS

- ✓ **Relieves pressure on A&E** from minor eye care complaints.
- ✓ **Relieves pressure on GP services** from minor eye care complaints.
- ✓ **Reduces activity in hospital eye services** from onwards referrals.

### Benefits to staff

- ✓ Optometrists can provide a wider range of clinical services – **increasing satisfaction, recruitment & retention**.
- ✓ **Facilitates best use of specialist HES staff.**

### Benefits to wider society

- ✓ **Reduces productivity loss** from inactivity due to eye complaints.
- ✓ **Promotes regeneration of high streets** as wider range of services provided.

| | |
|---|---|
| **Indicative service cost** | **£60.78m pa.** |
| **Indicative benefit to NHS** | **£90.75 m pa.** |
| **Indicative net benefit to NHS** | **£30.07 million pa.** |

# Intervention 2: National roll-out of the Integrated Glaucoma Pathway has the potential to release ~300,000 HES appointments per year, through a combination of shifting activity to the community and avoiding unnecessary referrals.


## Description of the intervention

This intervention consists of three parts:

- *Glaucoma Referral Refinement (GRR)* for patients referred for further investigation with signs of suspected glaucomabut without clinical circumstances indicating urgent or emergency referral. Optometrists use repeat measurements, beyond the normal scope of General Ophthalmic Service (GOS) provision, to refine the referral. The aim of this service is to reduce false positive referrals into HES Glaucoma clinics.
- *Glaucoma Enhanced Referrals (GERS)* builds on the standard tests used in GRR, using additional tests to confirm the risk of glaucoma or ocular hypertension. This will allow local areas to improve the accuracy of referrals still further, deflecting an increasing number of unnecessary referrals.
- *Glaucoma Monitoring (GM)* monitors patients diagnosed either as having ocular hypertension ("OHT") or stable chronic open angle glaucoma ("COAG"), to prevent conversion from OHT to COAG or progression of existing COAG.

**We have modelled the impact and benefits of rolling out an integrated pathway at a national level (England).**

## Essential pre-requisites for successful implementation

- Patient awareness of Glaucoma Referral Refinement service, to avoid patients attending A&E and GP.
- Encouraging GPs and optometrists to refer patients into GRR and GERS if if glaucoma suspected, to avoid unnecessary referrals.
- Ensuring that hospitals refer patients into glaucoma monitoring scheme once a patient has been diagnosed.

**NOTE: As with all other interventions in this paper, this benefit is calculated based on tariff costs (ie per-activity amounts paid to optometry providers, offset against equivalent costs in hospital eye services. Total cost of delivery in a community setting is currently being analysed by AOP, as part of an ongoing programme of work.*

## Anticipated benefits

### Benefits to patients

- ✓ **Access is more convenient;** (i) on High Street vs. travelling to hospital; (ii) more flexible timing vs set clinic times.
- ✓ **Reduces anxiety, cost and time commitment associated with false positive referrals.**

### Benefits to the NHS

- ✓ **Relieves pressure on hospital eye services** through (i) reducing false positive referrals; and (ii) shifting activity to community settings.
- ✓ **Frees up ophthalmologist time** to focus on more complex and high-risk patients.

### Benefits to staff

- ✓ Optometrists can provide a wider range of clinical services – **increasing satisfaction, recruitment & retention**.
- ✓ **Facilitates best use of specialist HES staff.**

### Benefits to wider society

- ✓ **Reduces productivity loss** as patient travel commitments reduced.
- ✓ **Secondary contribution to reducing sight loss** as releases capacity for higher-risk patients – widespread economic & social benefits.

| | |
|---|---|
| **Indicative service cost** | **£33.40m pa.** |
| **Indicative benefit to NHS** | **£46.31m pa.** |
| **Indicative net benefit to NHS** | **£12.92* million pa.** |

# Intervention 3: National roll-out of the Integrated Cataract Pathway has the potential to release ~480,000 HES appointments per year, mainly through shifting pre- and post-surgery activity to community settings.

## Description of the intervention

The Cataract Pathway starts with a pre-operative assessment during which a patient, who is confirmed to have a cataract, indicates their willingness to have cataract surgery (following an explanation of the risks and benefits by their primary care optometrist).

The post-operative phase of the pathway includes a clinical examination to check for, and treat, any post-operative complications, assess visual outcome and refractive status, collect information for clinical audit, and ascertain patient satisfaction.

This service would see primary care optometrists commissioned to deliver this phase in the primary care setting thus releasing capacity in secondary care.

Emergency situations fortunately rarely arise, but the proposed pathway will have clear, documented and agreed contingency arrangements for such situations.

**We have modelled the impact and benefits of rolling out an integrated pathway at a national level (England). Using NHS Hospitals activity only.**

## Essential pre-requisites for successful implementation

- NHS hospitals referring patients following surgery to primary care service to ensure that patients utilise the post cataract service. Additionally for GPs, optometrists to refer people into the pre cataract surgery instead of referring straight into hospitals.
- Ensuring that pre and post cataract appointments are accessible to patients; aka that patients take full advantage of the service provided.

## Anticipated benefits

### Benefits to patients

- ✓ **Access is more convenient;** (i) on High Street vs travelling to hospital; (ii) more flexible timing vs set clinic times.
- ✓ **Reduces cost and time commitment associated with declining surgery at HES.**

### Benefits to the NHS

- ✓ **Relieves pressure on hospital eye services** through (i) refining referrals / reducing total referral numbers; and (ii) shifting some activity to community settings.
- ✓ **Frees up ophthalmologist time** to focus on more complex and high-risk patients.

### Benefits to staff

- ✓ Optometrists can provide a wider range of clinical services – **increasing satisfaction, recruitment & retention**.
- ✓ **Facilitates best use of specialist HES staff.**

### Benefits to wider society

- ✓ **Reduces productivity loss** as patient travel commitments reduced.
- ✓ **Secondary contribution to reducing sight loss** as releases capacity for higher-risk patients – widespread economic & social benefits.

| | |
|---|---|
| Indicative service cost | £37.71m pa. |
| Indicative benefit to NHS | £71.96m pa. |
| Indicative net benefit to NHS | £34.25 million pa. |

# Intervention 4: Transforming the potential of Optical Coherence Tomography (“OCT”) in community settings has the potential to release ~211,000 HES appointments per year – plus rapid scale-up of benefits to patients as technology advances.

4

## Description of the intervention

Optical Coherence Tomography (“OCT”) diagnosis machines allow for the early detection of eye conditions such as glaucoma, macular degeneration, and diabetic retinopathy, enabling timely intervention and management. OCT capabilities are extremely sophisticated, for example the interpretative guidance on the 3D images of the retina providing a “Glaucoma Report” with high sensitivity/specificity and predictive power. Optometrists are highly adept at using both their clinical expertise and patient empathy to provide tailored advice and guidance. The body of knowledge inherent in this “expert human supported by proven technology” is advancing rapidly. Moreover, this is a very fertile space for innovation, with many companies developing new solutions, and these will span both eye care and eye health. For example, we can expect to see tools such as those providing a “Glaucoma Report” for increasingly prevalent conditions such as AMD, with a high potential for effective early screening at low cost to the NHS and low burden to the patient.

By providing OCT in community settings, patients can receive advanced eye care closer to home.

By enhancing the use of OCT in primary care and its incorporation into NHS-led care pathways – most notably NHS professionals being able to see and trusting the results from them – it will be possible to free up capacity in the NHS as well as providing early diagnosis for patients, helping prevent the progression of eye diseases and reducing the need for more expensive treatments and hospital referrals.

## Essential pre-requisites for successful implementation

- Ensuring that OCT machines are readily available at optometry practices and sufficient number of optometrists are trained to provide OCT-based services. *AOP estimate that there are around 3,000 OCT machines already in use in community optometry, with a total capital in the region of £90m.*
- Re-formulation of local care pathways to ensure GPs and hospitals refer patients to optometry OCT service, and are also able to use results from optometry OCT. This may include investing in electronic patient referral data, so that results from OCT diagnoses in primary care can be sent to hospitals if required for timely treatment and analysis of results.
- Agreement of a reimbursement arrangement which is sufficient to sustain optometrists’ service provision.

## Anticipated benefits

### Benefits to patients

- ✓ **Access is more convenient;** (i) on High Street vs travelling to hospital; (ii) more flexible timing vs set clinic times.
- ✓ **Reduces cost and time commitment associated with declining surgery at HES.**

### Benefits to the NHS

- ✓ **Relieves pressure on hospital eye services** through (i) reducing false positive referrals; and (ii) shifting activity to community settings.
- ✓ **Frees up ophthalmologist time** to focus on more complex and high-risk patients.

### Benefits to staff

- ✓ Optometrists can provide a wider range of clinical services – **increasing satisfaction, recruitment & retention**.
- ✓ **Facilitates best use of specialist HES staff.**

### Benefits to wider society

- ✓ **Reduces productivity loss** as patient travel commitments reduced.
- ✓ **Secondary contribution to reducing sight loss** as releases capacity for higher-risk patients – widespread economic & social benefits.

| | |
|---|---|
| **Indicative service cost** | **£12.71m pa.** |
| **Indicative benefit to NHS** | **£33.49m pa.** |
| **Indicative net benefit to NHS** | **£20.78 million pa.** |

If implemented well, interventions such as these have the potential to deliver better outcomes for patients, increased staff satisfaction, and both financial and operational benefits for the NHS.

## Benefits to the NHS – financial and operational

- ✓ **Fewer referrals** for ophthalmology outpatient appointments.
- ✓ Patients **diverted from A&E.**
- ✓ **Reduced demand for GP appointments** for eye-related conditions.

## Benefits to patient and those close to them

- ✓ **Access is more convenient;** (i) on High Street vs travelling to hospital; (ii) more flexible timing vs set clinic times.
- ✓ **Reduces anxiety, cost and time commitment** associated with false positive referrals.

**Four eye care interventions**


## Benefits to staff – in the community and hospital eye services

- ✓ Optometrists can provide a wider range of clinical services – **increasing satisfaction, recruitment & retention.**
- ✓ **Facilitates best use of hospital staff time**, and allows them to focus on activities they find most satisfying.

## Benefits to society and the wider economy

- ✓ **Reduces productivity loss** from inactivity due to eye health issues and sight loss (for people who could be working or otherwise engaged in social & economic activity).
- ✓ **Promotes SMEs and the regeneration of High Streets** as a wider range of services becomes available through optometry.

# An initial assessment shows that all four proposed interventions are desirable, viable and feasible.

**To ensure that the proposed interventions are robust, we have assessed them against the tests of desirability (are they desired by those who will use and pay for them), viability (clinical, financial and commercial) and feasibility (ie can be delivered successfully on an ongoing basis).**

| Intervention | Would the change be Desirable by patients, NHS staff & leaders, optometrists and other key stakeholders? | Would the change be Viable financially for those funding and delivering it? | Would the change be Feasible on a clinical, operational, technical, regulatory basis? |
|---|---|---|---|
| **Community Urgent Eyecare Services** | Yes, strong value demonstrated where piloted/rolled-out locally. | Yes, subject to appropriate funding, the net cost savings suggest the market could deliver sustainably. | Yes, already working where deployed locally. |
| **Integrated Glaucoma pathway** | Yes, appears attractive to patients and professionals where used to date. | Yes, subject to appropriate funding, the net cost savings suggest the market could deliver sustainably. | Yes, already working where deployed locally. |
| **Integrated Cataract pathway** | Yes, appears attractive to patients and professionals where used to date. | Yes, subject to appropriate funding, the net cost savings suggest the market could deliver sustainably. | Yes, already working where deployed locally. |
| **Transforming the potential of OCT in community settings and harnessing its continued technological advance** | Yes, increased convenience would be valued by patients and increased capacity by the NHS. | Yes – assuming that (i) appropriate clinical pathways and protocols could be developed to support, and (ii) commercially-acceptable tariff arrangements could be agreed. | Yes, advances in OCT-based equipment and software, strong and advancing human capability to use these, and proven models for sharing and using results across settings. |

# 6

# Conclusions and Next Steps

# Initial analysis suggests that these four interventions have potential to deliver net benefit of around £98m per year and a reduction of around 1.9m appointments in under-pressure HES, GP surgeries and A&E departments.

**Implementing all four interventions together will ensure maximal benefits – to patients, clinical staff, and NHS providers and systems. In addition to realising all of the benefits below, implementing these changes together will provide a clear signal – to the sector and to patients – about potential longer-term and more radical changes to eye care pathways and the benefits which they might bring.**

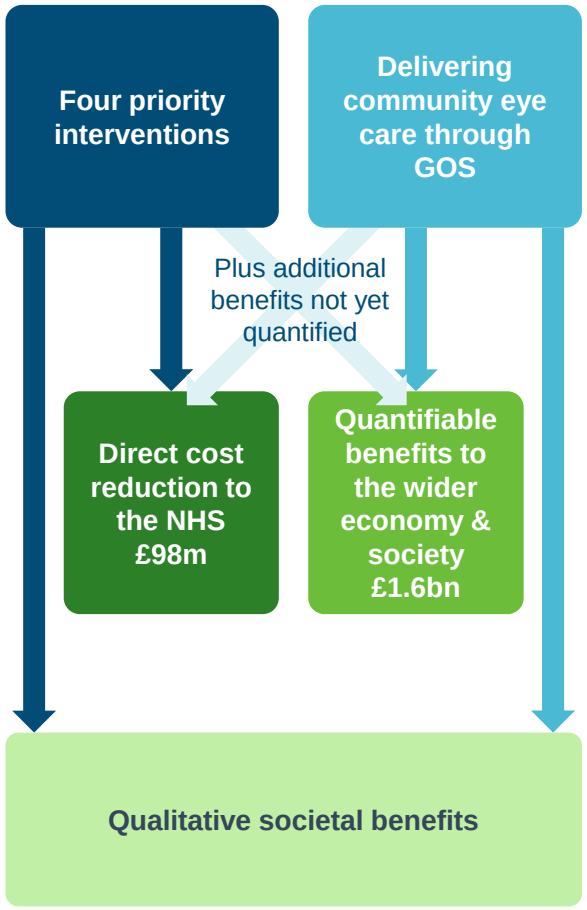
**It will also allow for economies of scale in implementation programmes and approaches, and so minimise implementation risk. However, they could also be implemented individually if desired.**

| Intervention | Cost of the intervention (annual) | Reduce demand for under-pressure services (annual, vs baseline) | | | | Financial benefit from reduced demand (annual, vs baseline) | | | | Anticipated annual net benefit (modelled, rounded) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Substituted HES outpatient activity | Reduced HES demand | Reduced A&E attendances | Reduced GP attendances | Substituted HES outpatient activity | Reduced HES demand | Reduced A&E attendances | Reduced GP attendances | |
| Community Urgent Eyecare Services | £60.78 million | N/A | 209,000 | 242,713 | 424,747 | N/A | £36.6 million | £35.2 million* | £17.8 million* | £30.07 million |
| Integrated Glaucoma pathway | £33.40 million | 178,818 | 123,466 | N/A | N/A | £25.7 million | £20.6 million | N/A | N/A | £12.92 million |
| Integrated Cataract pathway | £37.71 million | 363,049 | 118,278 | N/A | N/A | £52.2 million | £19.7 million | N/A | N/A | £34.25 million |
| Widening the scale and scope of OCT in community settings | £12.71 million | 211,000 | N/A | N/A | N/A | £33.49 million | N/A | N/A | N/A | £20.78 million |
| Total for four interventions | £144.60 million | 752,867 | 450,744 | 242,713 | 424,747 | £111.4 million | £76.9 million | £35.2 million | £17.8 million | £98.02 million |

**To note, we have calculated cost savings to pharmacies of approximately £1.1 million. This is included in the final calculation of the net benefit.*

# When combined with existing GOS services, these four interventions present a compelling case for extending primary eye care – bringing benefits for patients, for the NHS and for wider society.

**Taken together, the interventions described in this paper (the current GOS and the four proposed changes to the role of High Street optometry in Eye Care & Eye Health) provide benefits at three levels – direct benefits to the NHS, quantifiable wider economic benefits, and qualitative social benefits:**




**Direct cost reduction to the NHS:**

These interventions will relieve demand on those services which are under most pressure (HES, A&E and GPs). They free up capacity for HES to see more complex patients, and to address backlogs for both first appointments and follow-ups – thereby alleviating both clinical and performance risk. Taken together, **the four new interventions could release up to 1.9m appointments across hospital eye services (including around 1.2m appointments per year in hospital eye services, equivalent to around 9,600 appointments per year for each Acute Trust in England).**

The interventions will also generate greater benefits than the costs required to implement them, meaning an overall gain in effective use of NHS resources. Overall **reduction in cost to the NHS could be up to £98m per year,** assuming national roll-out of all four interventions.

**Quantifiable wider economic benefits:**

Better eye health has direct productivity gains, as fewer people stop working, reduce their hours, or cannot fulfil their economic potential due to poor eye health. It also has indirect productivity gains, particularly in reducing the amount of informal care required for people with severe eye disease, with consequences for both social care and labour market participation. **GOS delivers ~£1.63 billion equivalent of DALY savings from correcting refractive error in children and young people; and ~£0.46 billion from early detection of AMD and Glaucoma in older people.**

**Qualitative societal benefit:**

Patients accessing eye care through the four interventions will have faster and easier access to services, and (in the case of CUES) are more likely to get the care they need 'first time' without the need for onward referral. This reduces anxiety as well as the inconvenience associated with accessing hospital care. High Street optometrists are more accessible than hospitals and GP surgeries (easier to reach by public transport, easier to park, have more flexible appointment / opening times) and waiting times are shorter.

## However, it is also important to note that this is only part of the story – and that there are many areas of benefit which are yet to be quantified…

For example, this analysis does not include the 'crossover' benefits of GOS to the NHS and of the four eye care interventions to the wider economy. Benefits of GOS to the NHS include offsetting the development of other health problems through preserving eye health, including the economic, clinical and psychological / patient wellbeing impacts of averting falls and avoiding deterioration of mental health due to sight loss. Benefits to the wider economy from the four interventions include reducing time lost from work and school for people attending (potentially regular or multiple) hospital appointments, as well as 'knock-on' economic and patient benefits for those patients with more severe disease, who can be seen more quickly in hospitals as their capacity is released through activity shifts to the community. These benefits could be quantified in a future phase of work, if desired.

# This is only the start of what could be achieved. In most advanced countries, the potential of community-led service provision will grow significantly in coming years, as rapidly advancing technologies transform eye care.

| Transformation pillar | What could the future look like? What could this mean for eye care provision? |
|---|---|
| **Advancements in Optical Coherence Tomography (OCT) and other diagnostics, supported by AI** | • **Rapid and powerful advances in OCT imaging and analysis allows for a wide range of major eye conditions to be screened, diagnosed and monitored in optometry practices,** reducing the need for hospital referrals and monitoring appointments. There is a growing consensus that such technologies enhance both safety and efficiency in delivery. Software including AI algorithms analyse images to detect signs of eye disease and provide rapid analysis and results, in order to inform diagnosis and treatment. Optometry practices' close and long-term customer relationships also allow these test results to be seen in the context of the individual's lifestyle, family and other factors, driving true patient-centricity in healthcare. |
| **Tele-optometry and automated remote monitoring** | • More and more patients with chronic eye conditions will be able to use **automated remote monitoring** – through smartphone applications or new technologies such as smart contact lenses. This means that any issues are picked up quickly, leading to **swift intervention and improved outcomes.** It also moves beyond **routine monitoring appointments as the main touchpoint,** as discussions with clinicians are only necessary when an issue is identified through continuous monitoring. This reduces the burden on both patient and professional.<br>• **Tele-optometry and networked care models facilitate seamless integration of optometry with hospital eye services**, and potentially also other primary care services and patient organisations / charities. Optometrists have access to full patient records as well as access to expert clinical opinions from secondary care, if this is needed to support their own judgements supported by their own technology. Optometrists could be the 'lead clinician' for patients with severe but largely stable eye disease. |
| **Clinical pathway transformation** | • **The full cataract pathway (including surgery in most cases) could be provided in a community setting, and the same for most elements of the macular pathway – including injections**. This would enable a very significant release of HES capacity and a shift in focus towards the most complex patients. Some hospital activity can move directly to community settings under networked care arrangements – and other activity potentially moving to new types of provider offering care in more convenient locations. |

# This report identifies potential for reducing appointment numbers in under-pressure services by ~1.9m annually, as well as annual savings to the NHS of £98m. We make four recommendations to realise these opportunities, as a starting point for wider and more transformational change.

This report highlights the value of GOS service as a platform for wider change in eye care services and highlights four low-cost and low-risk interventions which could rapidly make a significant difference to patients, eye care professionals of all kinds and the NHS. In relation to these interventions as a whole – and to the future potential for further, more radical transformation of eye care in the future – we propose the following next steps:


**ACT LOCALLY**

**Local NHS organisations should consider the benefits which these interventions could provide to their Eye Care & Eye Health services – and therefore ultimately to their patients and citizens.** The stakeholder engagement we have secured during this work suggests that there is significant enthusiasm from optometrists to provide these additional services, and the arguments and analysis in this report can easily be adapted to local circumstances. Tailoring the proposed interventions to local circumstances will reduce implementation risk and effort, and maximise benefit, in most areas across the country.


**SUPPORT NATIONALLY**

**Government, national NHS bodies, professional bodies and others should consider how best to strongly facilitate such change at local level** – including through providing leadership and setting expectations about what patients should expect from the services, in identifying and challenging inequalities and unwarranted variations in service provision and outcomes, and in signalling clearly that such local innovation is supported at the national level.


**THINK BIG**

**In addition to short-term benefits, these changes can lay the foundations for broader changes to the Eye Care & Eye Health ecosystem, including ensuring that the sector can harness the transformational benefits of technology for which ophthalmology seems particularly well suited. A National Plan for Eye Care & Eye Health may have a role to play in first articulating – and then delivering – this wider transformational change.** Achieving this change will require significant policy focus to ensure best practice is regularised, and therefore that benefits are maximised. It will also need careful consideration of the underlying infrastructure, including building up the digital and data assets (the current limitations of which have been identified to some extent in this work), as well as ensuring the regulatory and commercial viability of any new services and the workforce which will provide them. Digital infrastructure, workforce capability and commercial service sustainability will be particularly important as technology continues to rapidly advance what primary eye care services can achieve safely and efficiently for their patients.


CATALYSE NOW

**The commissioning partners for this report (Association of Optometrists, Fight for Sight, Primary Eyecare Services and Roche) are clear in calling for a national commitment towards such a plan, as well as taking an ongoing role to encourage and support partnership-based working with Government, national and local NHS leaders, professional associations, patient representative groups and others.**

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