NHS England

Eye Health Needs Assessment

Wessex

(Dorset, Hampshire and Isle of Wight)

Final Version: November 2018

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Content

1. Executive summary

This Eye Health Needs Assessment was carried out in 2017 by Dr Rory Nicholson, an ophthalmologist undertaking a quality improvement fellowship, with guidance from Dr Mohit Sharma, public health consultant, Public Health England – South East.

The purpose was to systematically assess eye health issues across Dorset, Hampshire and the Isle of Wight, a population of 2.755 million, and to identify any gaps or deficiency in service provision as well as highlighting any inequalities in service provision.

Nationally ophthalmology accounts for the second-highest outpatient attendance of any medical or surgical specialty. From 2013 to 2017 there has been a marked increase in attendance rates to the largest providers of hospital eye services in the Wessex area.

Sight loss accounts for a substantial cost not only to the NHS, but more widely in social care services and society due to a long period of disability, reduced productivity and quality of life, often in otherwise healthy and active people. Within Wessex, the cost of sight loss is likely to be over ten times higher than current expenditure on problems of vision and rehabilitation.

There is significant variation in expenditure across Wessex, with some areas spending twice as much as others on problems of vision.

Demand for eye health and social care services are rising due to an aging population and increasing comorbidities. This is of particular concern in Wessex with a disproportionate projected increase in the over-65 year age group while the working population is predicted to remain stable, especially in the large rural areas of Hampshire and Dorset.

Transformational change in pathway design and delivery of service is required to increase capacity by more efficient use of existing workforce, particularly in the community.

There is a projected increase in the prevalence of diabetes mellitus and hypertension, which is independent of age. Both of these conditions are common causes of eye disease and sight impairment.

Wider public health prevention programmes to reduce obesity levels, increase exercising and stop smoking are very relevant to eye health. The link between smoking and sight loss is as strong as the link between smoking and lung cancer.

Sight loss is closely linked to falls and a considerably increased risk of depression, both of which are significant public health issues in Wessex.

Problems of vision can co-exist with other health and social care needs in seldom heard groups such as those with dementia, learning disabilities, care home residents and the homeless. These groups need particular recognition and advocacy to reduce health inequalities.

Eye Health and Care Services are provided in a wide range of care settings with a range of commissioners including NHS England, Clinical Commissioning Groups, Local Authorities and Public Health England, with no oversight of pathways as a whole. This results in reduced opportunity for collaboration, for addressing the patient experience across the pathway, and for developing new models of service delivery. Good clinical leadership is required to address this at a strategic level.

There is no common data collection platform within Wessex, and data relating to eye health care in Wessex are currently inconsistent and incomplete.

Adoption of a linked IT platform for eye health provision across Wessex would greatly improve the ability to collect and share data, and design more effective pathways. A particular area of need is the interface between optometry and hospital eye services, which should be addressed soon to enable effective collaboration on care pathways such as glaucoma, cataract and MECS (Minor Eye Conditions Service) pathways.

The Vision UK Ophthalmic Public Health Committee's Portfolio of Indicators has been endorsed by the Clinical Council for Eye Health Commissioning and would be an appropriate tool to measure local eye health outcomes.

The main conclusions and recommendations are to be found on pages 58-61.

2. Introduction

2.1 Public health importance

People value their sight more than any other sense,[1] and any level of sight loss, including uncorrected refractive error, has a tangible influence on quality of life.[2] Diseases of the eye have a particular public health importance due to the fact that they often occur in otherwise healthy and active people, resulting in a long morbid period of disability and reduced productivity. They are amongst the most costly diseases in terms of lost quality of life and healthcare expenditure.[3]

The scale of eye health care is easy to underestimate, because it is delivered in such a wide range of contexts, and by such a wide range of health professionals. Opticians have a presence on every high street, and optometrists carry out an increasingly wide range of diagnostic and therapeutic interventions. School nurses and orthoptists deliver vision screening to every child in every school in the country, as part of a national screening programme which has few parallels in other specialties. Annual diabetic eye screening is carried out for all people in the country with diabetes mellitus. Hospital ophthalmology has the second-highest outpatient attendance rate of any specialty (see Figure 1) and delivers the most commonly performed therapeutic surgical procedure in the country, with 396,317 cataract operations performed in England in 2016-17.[4] Potentially disabling ophthalmic conditions are common in otherwise healthy individuals; for example, the prevalence of glaucoma in the population over 40 is 2%.[5]

Increasing demands on an already-stretched service have led to capacity crises in ophthalmology departments across the country. The Royal College of Ophthalmologists declared in 2017 that “The increasing demand for hospital eye services is not being met and continues to grow”,[6] and there is a consensus that maintaining the status quo is no longer an option.[7]

2.2 Costs of sight loss and eye health care

Research commissioned by RNIB from Deloitte Access Economics[8] estimates that the cost to the UK economy of sight loss in the adult population of the UK totalled £28.1 billion in 2013. This figure comprises a direct healthcare cost of £3bn, and indirect costs of £25.1bn associated with lost employment opportunities, the unpaid care burden on friends and relatives, and the reduced health and wellbeing caused by sight loss.

The economic burden of sight loss for Wessex has not been calculated, but is likely to be substantial. A simple extrapolation of the above figures, by population size, would imply direct costs to Wessex (approximately 4.2% of the UK population) of £125m, and indirect costs of £1.05bn.

In fact, the expenditure in Wessex on problems of vision was £85,418,974 in the financial year 2013-14.[9] The amount spent on eye health by the NHS in Wessex is likely to diverge, therefore, from the total cost to the local economy by an order of magnitude.

Moreover, there is likely to be significant variation in eye health expenditure within Wessex: 2013-14 CCG budgeting data shows expenditure on Problems of Vision of £20 per person in Portsmouth (1.8% of total programme budget) compared with £42 per person on the Isle of Wight (3% of budget) and £39 per person in North East Hampshire (3.6% of budget).[9]

2.3 Aim of the EHNA

This needs assessment aims to systematically assess the eye health issues facing the population of Wessex, and to examine the current service in light of these issues. It aims to identify any gaps in the service, and variation in the service provided between different commissioning areas. Finally, it aims to act as a starting point for ongoing research and local initiatives to improve the eye health care service enjoyed by the people of Wessex.

This needs assessment is designed primarily to make use of existing data, and as such there are likely to be gaps in the data provided. No formal service mapping exercise was performed as part of this project, and this is being carried out separately by the LEHN.

This needs assessment focuses on the causes of preventable sight loss, and therefore does not examine the burden of sight loss and current habilitation/reablement service provision in detail. This issue is complex and extensive, and merits a separate assessment. A document written by England Vision Strategy to accompany this needs assessment, *Community-based Vision Rehabilitation Services in Wessex*[10] explores this issue.

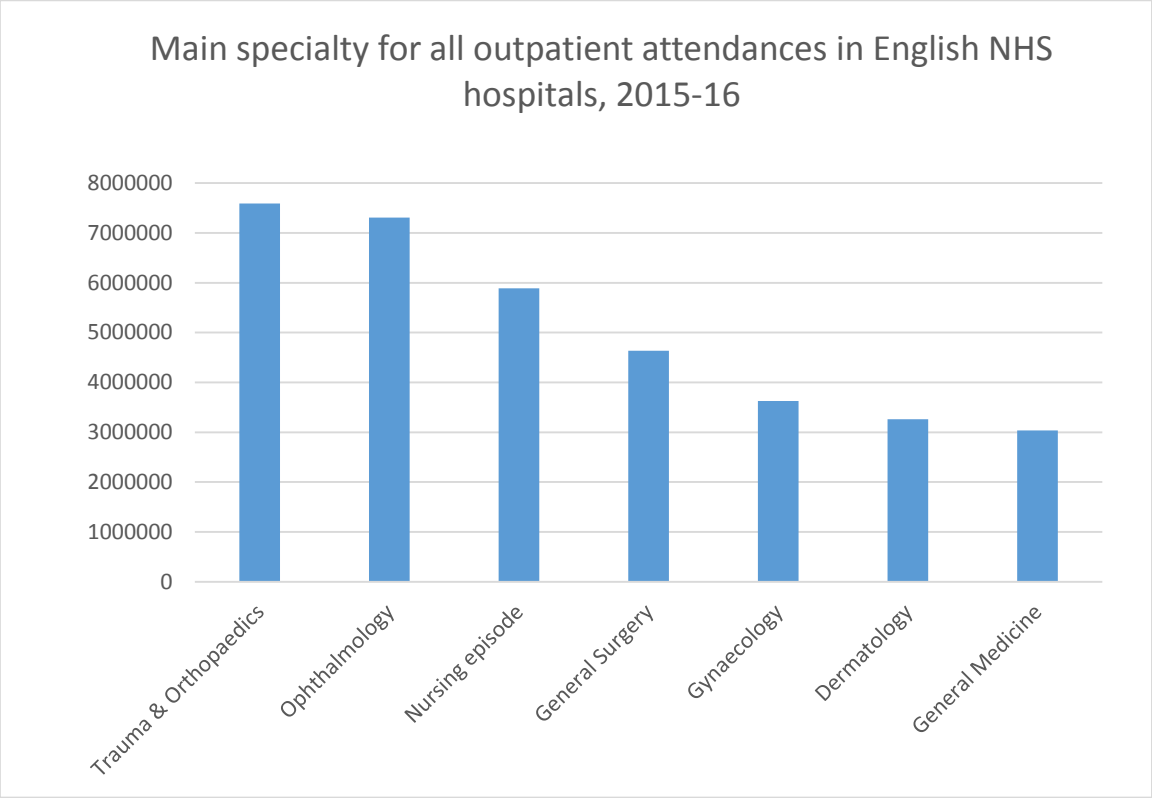

Figure 1: Number of NHS outpatient attendances in England 2015-16, by specialty. Specialties with attendance below 3m not included. Source: NHS Digital[11]

3. Methodology

3.1 Sources of data

This needs assessment draws primarily on pre-existing data sources in order to guide future research into local eye health needs within Wessex. As such, there are gaps in the data and variability in the way in which data are collected between different areas within the region. Data are generally more easily obtainable for the better-recognised causes of visual loss, and for the larger providers of eye health care within the region. There is a risk of failing to recognise aspects of the service which are not currently measured, and it is inevitably difficult to obtain data for those parts of the service which may be absent or under-served.

The majority of data used in this report were from the following sources:

- The National Eye Health Epidemiological Model (NEHEM)
- The RNIB Sight Loss Data Tool
- Quality and Outcomes Framework
- Public Health Outcomes Framework
- General Ophthalmic Services (GOS) activity Statistics
- Hospital Episodes Statistics

- Office for National Statistics population data
- Projecting Older People Population Information System (POPPI)
- Projecting Adult Needs and Service Information System (PANSI)
- Business Intelligence departments of individual providers
- Audit data from individual providers

3.2 Stakeholder mapping

The following Stakeholders were identified at the outset of the needs assessment project:

- Wessex LEHN steering group
- Local NHS Trusts
    - Dorset County Hospital NHS Foundation Trust
    - The Royal Bournemouth and Christchurch Hospitals NHS Foundation Trust
    - Isle of Wight NHS Trust
    - Hampshire Hospitals NHS Foundation Trust
    - University Hospital Southampton NHS Foundation Trust
    - Portsmouth Hospitals NHS Trust
    - Southern Health NHS Foundation Trust
    - St Mary's NHS Treatment Centre
- Local Optical Committees
    - Dorset LOC
    - Hampshire LOC
- Clinical Commissioning Groups
    - NHS Dorset CCG
    - NHS North East Hampshire and Farnham CCG
    - NHS Fareham and Gosport CCG
    - NHS Isle of Wight CCG
    - NHS North Hampshire CCG
    - NHS Portsmouth CCG
    - NHS South Eastern Hampshire CCG
    - NHS Southampton City CCG
    - NHS West Hampshire CCG
- Local Authorities
    - Borough of Poole
    - Bournemouth Borough Council
    - Dorset County Council
    - Hampshire County Council
    - Isle of Wight Council
    - Portsmouth City Council
    - Southampton City Council
    - Surrey County Council
- Public Health England
    - Dr Mohit Sharma
- Third sector organisations
    - National

        - AgeUK
        - Guide Dogs
        - Macular Society
        - Royal National Institute of Blind People
        - SeeAbility
        - Thomas Pocklington Trust
    - Local
        - Bournemouth Blind Society
        - Dorset Blind Association
        - Helping Hands for the Blind
        - Isle of Wight Blind Society
        - Open Sight
        - Portsmouth Association for the Blind
        - Southampton Sight
- Healthwatch
    - Healthwatch Hampshire
    - Healthwatch Dorset
    - Healthwatch Isle of Wight
    - Healthwatch Portsmouth
    - Healthwatch Southampton
    - Wessex Voices
- Individual Service user

3.3 Service user engagement and patient voice

Patient voice was sought in a number of ways for this needs assessment:

1. Healthwatch and Wessex Voices were involved from an early stage in the design of the needs assessment.
2. A questionnaire was disseminated as widely as possible, asking service users to contact the authors with their experience of current eye health services in Wessex, and with their recommendations for service improvements (see Appendix).
3. Transcripts from a pre-existing service user engagement conducted by Healthwatch for a recent report into eye health services[12] were used.

Quotations from service users gained from these sources are included in the Appendix in order to illustrate key themes and issues.

4. Key national drivers and policy

4.1 VISION2020 and the UK vision strategy

The World Health Assembly Resolution of 2003 urged the development and implementation of plans to tackle vision impairment, now known as VISION 2020 plans. The most recent iteration of these plans is the Global Action Plan 2014-2019[13].

The UK vision strategy was launched in 2008 in response to VISION 2020. The strategy was refreshed in 2013 with the launch of the 2013-2018 Strategy[14], which aims to achieve the following outcomes:

- Outcome 1: Everyone in the UK looks after their eyes and their sight
- Outcome 2: Everyone with an eye condition receives timely treatment and, if permanent sight loss occurs, early and appropriate services and support are available and accessible to all
- Outcome 3: A society in which people with sight loss can fully participate

4.2 National outcomes frameworks and the portfolio of indicators for eye health and care

The NHS Outcomes Framework 2017-18[15] sets out the high-level national outcomes that the NHS should be aiming to improve. It includes a duty on the NHS commissioning board and clinical commissioning groups (CCGs) to have regard both to the need to reduce inequalities between the people of England, and to National Institute of Health and Care Excellence (NICE) quality standards.

The Public Health Outcomes Framework 2016-2019[16] similarly sets out the high-level national public health outcomes for which data are collected and success is measured against. The two overarching outcomes for the PHOF are:

- Outcome 1: Increased healthy life expectancy
- Outcome 2: Reduced differences in life expectancy and healthy life expectancy between communities.

The NHSOF and PHOF are by necessity extremely broad, and while eye health clearly has a significant impact on many of the outcomes listed, only a few outcomes relate specifically to eye health. For this reason, the VISION2020 UK Ophthalmic Public Health Committee has published the Portfolio of Indicators for Eye Health and Care[17]. The portfolio draws on the existing NHSOF and PHOF, as well as the Adult Social Care Framework, to create a unified portfolio of both broad population and eye specific indicators which can be used to review and monitor eye health.

4.3 The way forward and the three step plan

The Royal College of Ophthalmologists recently commissioned a wide-ranging and detailed consultation across ophthalmology departments in the UK to identify innovative ways of working which have been developed at a local level, with the aim of building a helpful resource for ophthalmologists seeking to develop services and meet capacity needs. The results of this consultation were published in 2017 as The Way Forward[6], an extensive and detailed publication which includes separate reports for cataract, glaucoma, age-related macular degeneration and diabetic eye disease, and emergency eye care.

Although a consistent theme throughout the report is that there is likely to be no one best service delivery model, recommendations are made regarding the approaches most likely to be successful for a given level of resource and service demand.

Prior to the Way Forward consultation, the RCOphth published its Three Step Plan, which seeks to tackle preventable sight loss due to delayed treatment as a consequence of delayed review appointments and to improve access to eye services overall. The plan is as follows:

1. Collect and report data – make it mandatory: Data are not routinely gathered for review appointments that are delayed or postponed, putting patients at risk of not receiving care within a safe timescale
2. Maximise capacity – use all resources effectively: Use and share new models of care that optimise existing and limited resources such as personnel, space and equipment; improve patient flow and pathways within the hospital and the community
3. Empower and inform patients – promote personal responsibility: Work with patients and patient groups to facilitate better understanding and knowledge of eye health, diagnosis and personal treatment plans

4.4 Next steps on the NHS Five Year Forward View

Neither the Five Year Forward View[18] nor the recent 'Next Steps'[19] document acknowledge sight loss specifically as a key priority. However, many of the themes within these documents are as pertinent to the delivery of eye care as they are to any other area of health care.

The main priorities of the Next Steps are:

1. Improving A&E performance
2. Strengthening access to high quality GP services and primary care
3. Improvements in cancer services and mental health

Priorities 1 and 2 are extremely relevant to eye and vision services, with busy eye casualties under significant pressure nationwide, and a rapidly evolving primary eye care model being developed in partnership between optometrists, general practitioners and ophthalmologists.

The networked care model pioneered by Moorfields Eye Hospital vanguard programme is specifically cited by the 5YFV as one of the three models of care which the authors intend to promote, as a means of keeping care delivery in smaller hospitals viable.

4.5 Improving eye health and reducing sight loss: A call to action

In 2014, NHS England launched a consultation exercise focused on improving eye health and the provision of NHS eye health services, specifically early accurate

detection by primary services and effective management in the community. The work complimented NHS England's wider ambitions to build primary care services at scale and for NHS England and CCGs to commission together where appropriate, focused on the needs of specific communities. The consultation closed on September 12, 2014 and although no report was formally published from the exercise, 3 key themes were identified[20]:

1. A desire to see a greater delivery of care in the community;
2. A call for greater patient and user involvement in service redesign, particularly with more engagement of third sector organisations; and
3. Recognition that care pathways for eye health disorders needed to better reflect opportunities for health promotion, more consistent adoption of good practice guidelines in terms of management, and greater awareness of reablement/rehabilitation for service users with visual impairment and sight loss.

4.6 The CCG improvement and assessment framework

NHS England's CCG improvement and assessment framework was introduced in 2016 and aligns key NHS objectives and priorities with those of CCGs[21]. It has been designed to supply indicators for adoption in STPs as markers of success, and is intended to align closely with STP metrics.

The IAF is too recent to be included in the Portfolio of Indicators of Eye Health and Care, but many of the indicators are similar to those in the other frameworks described above. Key indicators which bear a close relationship to vision and eye health include:

Indicator 4: Injuries from falls in people aged over 65
Indicator 6: Inequalities in unplanned hospitalisation for chronic ambulatory care sensitive and urgent care sensitive conditions
Indicators 7 & 8: appropriate prescribing of antibiotics and broad-spectrum antibiotics in primary care
Indicator 9: The proportion of carers with a long term condition who feel supported to manage their condition
Indicators 10, 11 & 12: Provision of high quality care in hospital, primary medical services and adult social care
Indicators 32-35: Urgent and emergency care
Indicator 37: Patient experience of GP services
Indicator 39: Primary care workforce
Indicator 40: Patients waiting 18 weeks or less from referral to hospital treatment
Indicator 41: Achievement of clinical standards in the delivery of 7 day services
Indicator 49: Effectiveness of working relationships in the local system

4.7 The Clinical Council for Eye Health Commissioning

The Clinical Council for Eye Health Commissioning (CCEHC) was established in 2013 in response to the government's NHS reforms for a clinically-led, patient focused NHS. It is a multi-professional body with joint secretariat from the Royal College of Ophthalmologists and The College of Optometrists, but including input from patient groups, GPs, public health and social services.

The aim of the Council is to offer united, evidence-based clinical advice and guidance to those commissioning and delivering eye health services in England on issues where national leadership is needed. To this end, the CCEHC has published the following recommended service frameworks for commissioners:

- Community Ophthalmology Framework[22]
- Primary Eye Care Framework for First Contact Care[23]
- Low Vision, Habilitation and Rehabilitation Framework for Adults and Children[24]

4.8 Sustainability and transformation plans

Towards the end of 2015, the NHS Shared Planning Guidance asked every local health and care system in the country to come together to create local Sustainability and Transformation Plans (STPs)[25]. This initiative was intended to drive implementation of the changes laid out in the Five Year Forward View, in a way which made best use of local resources and expertise.

Two STPs have been developed within Wessex, one which covers Dorset[26] and another which covers Hampshire and the Isle of Wight[27].

The Dorset STP is arguably the more radical of the two, recommending a significant reconfiguration of existing services under the One Dorset Vanguard. Ophthalmology was identified as one of the nine acute services which were priorities for the acute vanguard programme, although as of January 2018 the ophthalmology vanguard has not been funded[28].

The Hampshire and Isle of Wight STP created three new vanguard programmes for Hampshire ("Better Local Care"), North-East Hampshire & Farnham ("Happy, Healthy at Home") and the Isle of Wight ("My life a full life"). In addition, two city-based transformation projects are planned for Southampton ("Better Care Southampton") and Portsmouth. These five programmes are more limited in geography and scope than the Dorset plans, and are designed to address different local needs with a strong emphasis on supporting integrated primary and social care. Eye and vision services are not specifically identified in any of the programmes, although many of the stated aims of the programmes would require addressing eye and vision services. These include:

- Staying well and independent
- More healthy years of life

- Better experience of care
- Better access to care
- Higher quality acute care
- Minimal delays in hospital.

5. Population characteristics of Wessex and health determinants

5.1 Population

The Wessex region has a population of approximately 2,754,900, of which 776,300 are resident in Dorset and 1,978,600 in Hampshire and the Isle of Wight.[29]

	2017	2035	Change
Dorset	423,300	463,700	+9.5%
Bournemouth	199,800	232,500	+16.4%
Poole	153,200	171,600	+12.0%
Total Dorset	776,300	867,800	+11.8%
Hampshire	1,370,800	1,512,400	+10.3%
Southampton	252,900	282,000	+11.5%
Portsmouth	214,400	236,700	+10.4%
IOW	140,500	152,500	+8.5%
Total Hampshire	1,978,600	2,183,600	+10.4%
Total	2,754,900	3,051,400	+10.8%

Figure 2: Estimated population of Wessex, 2017 and 2035. Source: PANSI[29].

5.2 Age

The populations of both Dorset and Hampshire / IOW have a higher proportion of over-50's than the population average, and a lower proportion of under-50's. This difference is more pronounced in Dorset, where 24.2% of the population are over 65, compared with the national average of 17.9%[30].

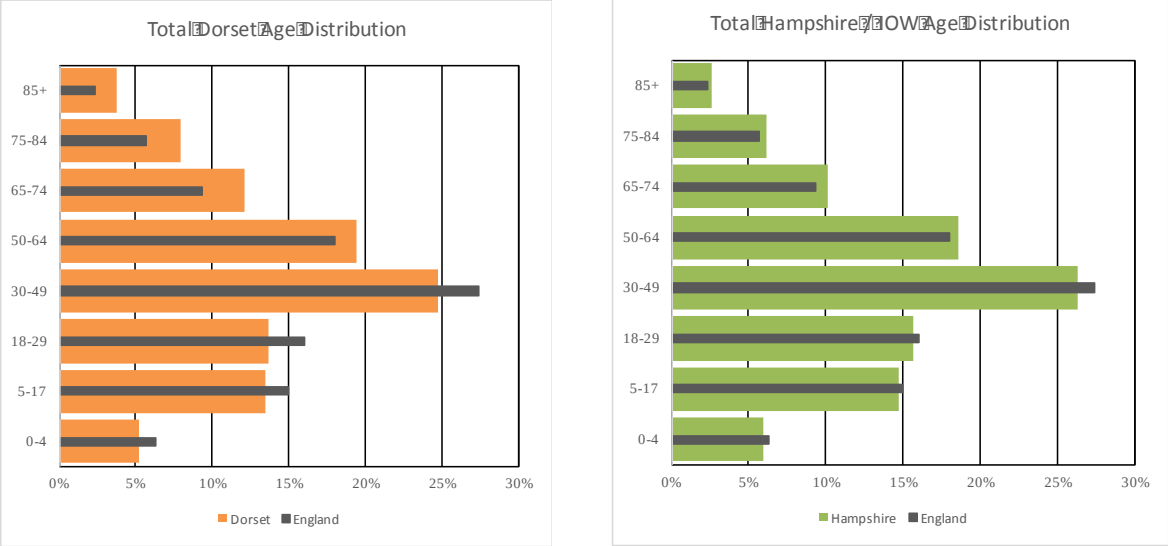

Figure 3: Population age profile in Dorset and Hampshire, compared with English averages. Source: ONS, 2017[30]

These aggregated data do not illustrate the variability in population profiles within the region. Southampton City CCG has the youngest population within the region, with 45% of the population aged under 30. Christchurch, in East Dorset, has one of the oldest populations in the country, with 31% aged over 65 and 28% aged under 30. This variability needs to be taken into account when planning services, as healthcare expenditure increases significantly with age (Figure 4).

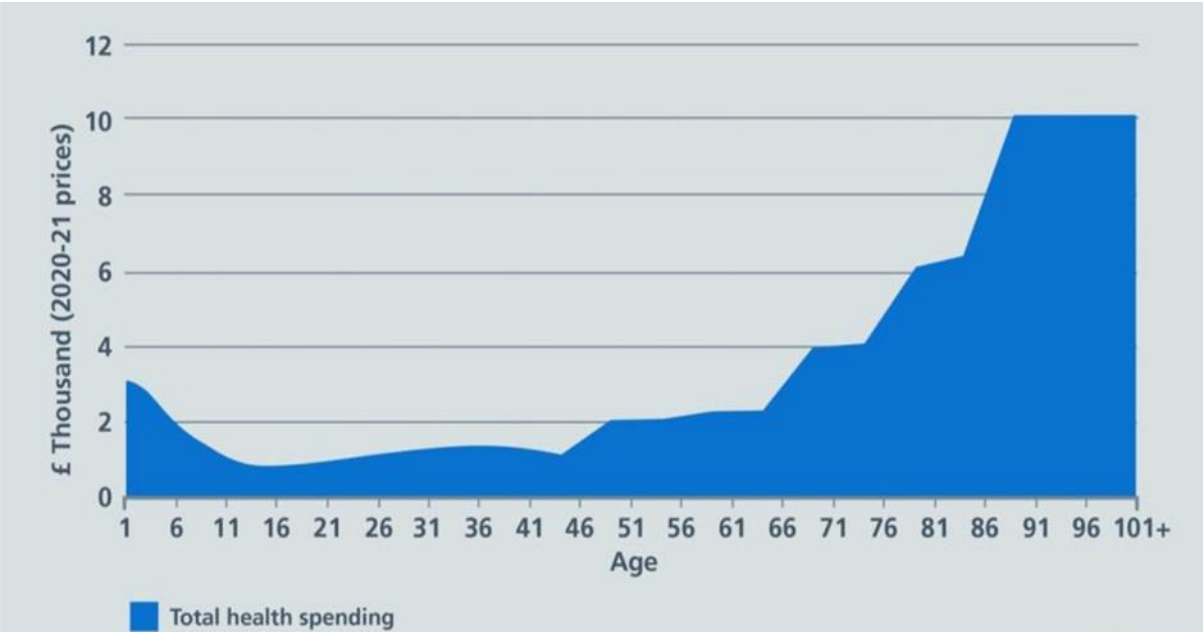

Figure 4: Annual health care spending rises sharply with age. Source: OBR[19]

In addition to the current healthcare burden of a disproportionate number of over-65s, the Wessex region is likely to experience even further demographic distortion over the next 20 years. Projections suggest that the number of under 65's in the region is likely to remain relatively static; the number of over 65's is likely to increase very significantly (Figures 5 & 6). This implies an unchanged workforce size while the potential healthcare burden rises dramatically.

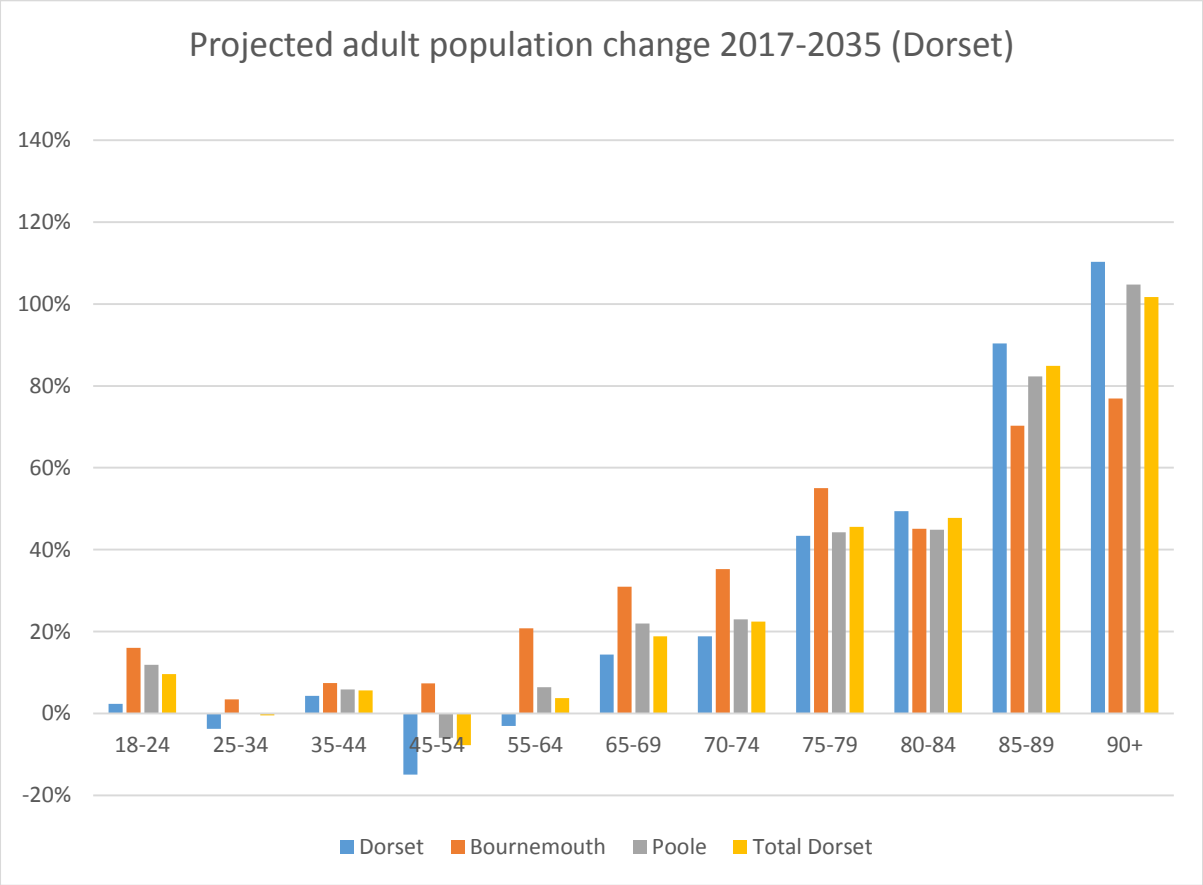

Figure 5: Projected adult population change in Dorset 2017-2035. Source: PANSI[29]

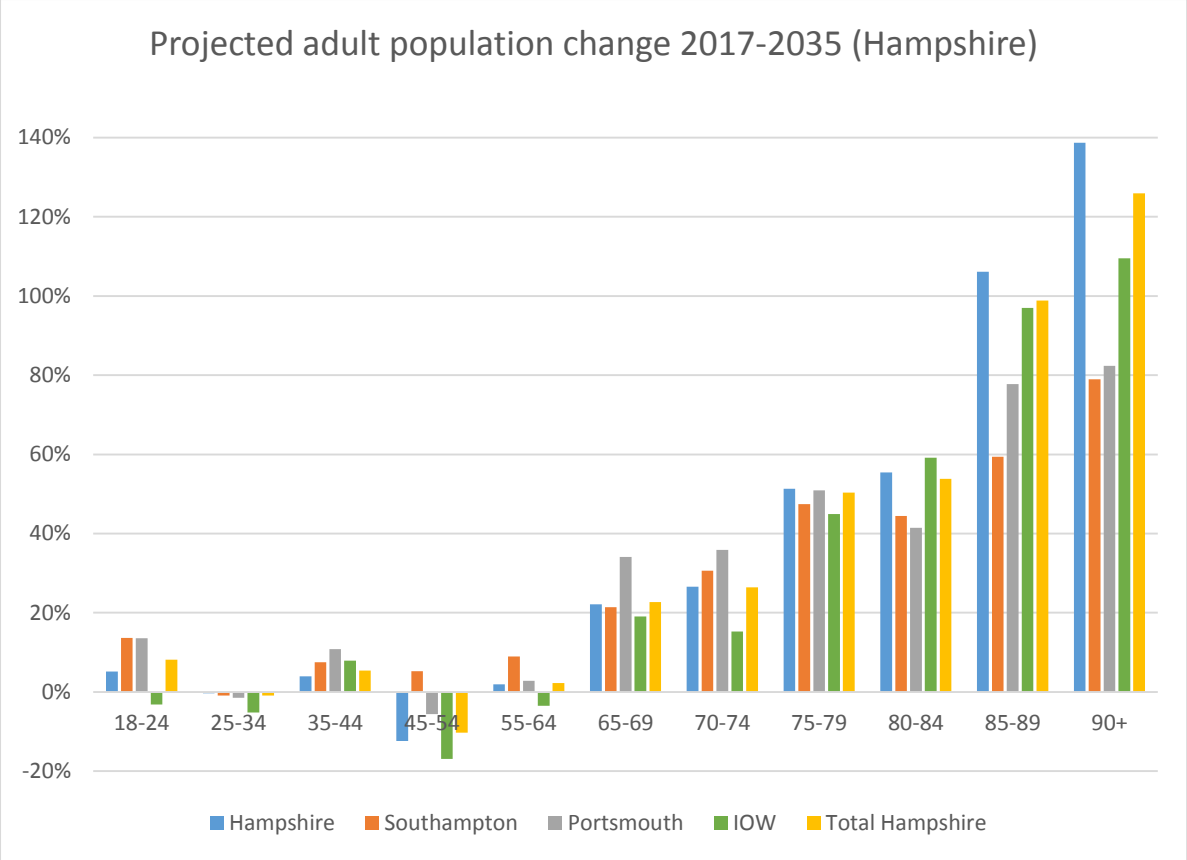

Figure 6: Projected adult population change in Hampshire 2017-2035. Source: PANSI[29]

5.3 Ethnicity

Ethnicity is an important risk factor for eye health. People of Black African and Caribbean ethnicity are at a 4-8 times greater risk of developing primary open angle glaucoma compared with the general British population[31–33] and disease presents 10-15 years earlier[31]. People of South Asian ethnicity are at a significantly higher risk of diabetes than the white population[34], and those who do develop diabetes have a higher prevalence of diabetic eye disease compared with diabetics of other ethnicities[35]. People of East Asian ethnicity have a higher risk of developing angle closure glaucoma[36]. People of ethnic minorities may be less likely to access eye care services[37–39], and present later with more advanced disease[40].

Wessex has a relatively low level of ethnic heterogeneity when taken as a whole. The most recent census data record that just over 94% of the population are white compared with a national average of 85% white. The only district in Wessex which reaches the 85% level of diversity is Rushmoor, which has a 10% Asian population due to a sizeable Gurkha community. Purbeck is the least diverse district in the region, with a population which is 99% white.

The largest ethnic minority populations in the region are Asian / Asian British (2.58%), Mixed / multiple ethnicities (1.52%) and Chinese/other (1.02%).

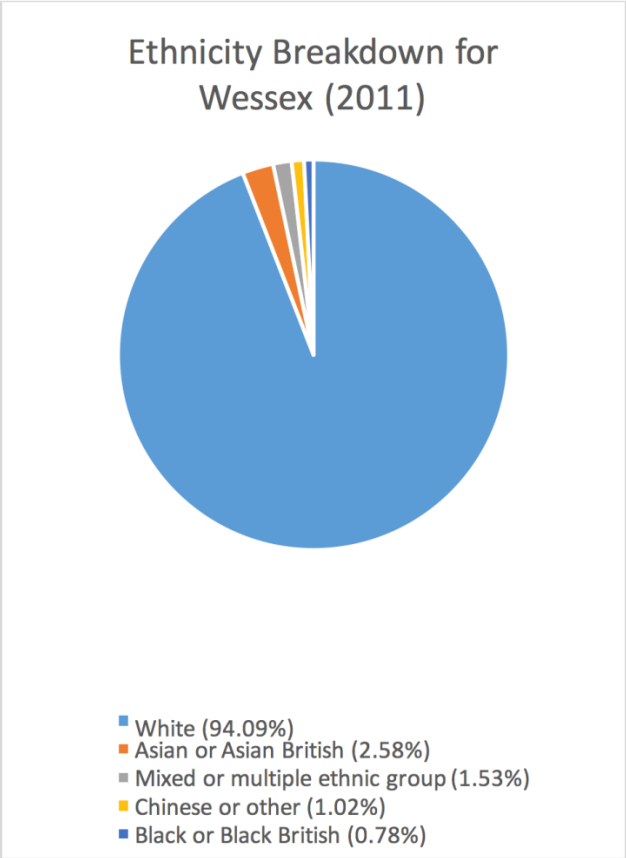

Figure 7: Ethnicity breakdown for Wessex (2011). Source: ONS[30]

5.4 Deprivation

Deprivation is both a cause and an outcome of sight loss, at both an individual and an area level. Evidence shows that there is a link between low income and sight loss; 49% of people with sight loss say that they live in a household with a total income of less than £300 a week[41].

Deprivation is associated with late presentation of glaucoma, a more aggressive disease process, and with blindness from glaucoma[42]. Deprivation is associated with an increased prevalence of diabetic retinopathy[43] and poorer uptake of retinal screening[43–45].

County Council / Unitary Authority	National Deprivation Rank (/152)
Hampshire	141
Dorset	128
Poole	121
Bournemouth	82
Isle of Wight	76
Southampton	54
Portsmouth	50

District Council	National Deprivation Rank (/326)
Hart	326
Fareham	312
East Hampshire	308
Winchester	307
East Dorset	304
Eastleigh	295
Test Valley	285
Basingstoke and Deane	271
New Forest	255
Christchurch	252
Purbeck	226
North Dorset	225
West Dorset	220
Rushmoor	210
Gosport	135
Havant	132
Weymouth and Portland	100

Figure 8: National deprivation rankings for county councils, unitary authorities and district councils within Wessex. Source: RNIB Sight Loss Data Tool[46]

There are clear inequalities within Wessex in terms of deprivation. There is a general trend of increasing deprivation from Northeast to Southwest across the region. Hampshire and Dorset are both well within the top tertile of England's deprivation ranking. The least deprived district in the country, Hart, is within the region. Portsmouth meanwhile, is in the bottom tertile of the national deprivation ranking, with Southampton at a similar level.

Portsmouth lies adjacent to Fareham and East Hampshire, two of the least-deprived districts in England. Similarly, the difference between Weymouth & Portland (bottom tertile), and the nearby Purbeck (top tertile), is striking.

A clear mismatch has been noted between areas of deprivation and location of optometry practices[47,48]. This inequity in service availability is particularly noticeable in West Dorset and the Isle of Wight (see Section 6.1.2.).

5.5 Urban / rural population distribution

Wessex has significant rural populations. These populations are likely to have lower accessibility to health care services, and are likely to become more isolated then urban populations if they lose vision. The largest proportions of people living in rural areas are in North Dorset, West Dorset, Purbeck and Winchester, each of which have the majority of their populations living in rural areas.

District Council	Percent urban	Percent rural
Hart	69.7%	30.3%
Fareham	99.4%	0.6%
East Hampshire	64.3%	35.7%
Winchester	42.5%	57.5%
East Dorset	75.7%	24.3%
Eastleigh	90.6%	9.4%
Test Valley	63.5%	36.5%
Basingstoke and Deane	73.3%	26.7%
New Forest	72.0%	28.0%
Christchurch	98.6%	1.4%
Purbeck	39.5%	60.5%
North Dorset	33.5%	66.5%
West Dorset	38.8%	61.2%
Rushmoor	98.5%	1.5%
Gosport	99.7%	0.3%
Havant	98.4%	1.6%
Weymouth and Portland	79.7%	20.3%

Figure 9: Proportion of urban and rural population by district council. Source: RNIB Sight Loss Data Tool[46]

The ability to drive a car is more important for those living in rural areas, and may be essential for employment. Even relatively mild sight loss may have a significant impact on these populations. 67% of people in Hampshire drive a car to work, and 65% of people in Dorset do so. This compares with an English average of 57%. The proportion is greater than 70% for people in East Dorset, Eastleigh and Fareham.[46] Community eye health services may be particularly valuable for these groups.

5.6 Seldom-heard groups

'Seldom-heard' is a term used to describe groups who may experience barriers to accessing services or are under-represented in healthcare decision making. Other terms for these groups include 'Hard-to-Reach'. Populations within these groups will vary, depending on local demographics, culture, and service configurations amongst other factors.

One of the specific functions for LEHNs set out in the NHS England single operating model is to improve access to sight tests for seldom-heard groups. One of the EVS priorities is "detecting eye conditions early, especially in seldom heard groups".[49]

A ‘seldom-heard’ working group has been established within the Wessex LEHN, which aims to:

1. Consider what is already known across Wessex
2. Learn from work that has been done in other areas and apply the learning
3. Feed into the development of the Wessex Eye Health Needs Assessment
4. Respond to the recommendations made in the Eye Health Needs Assessment when it is published
5. Identify who is responsible for taking action
6. Make recommendations for actions and projects to be taken forward to achieve the overall aim
7. to improve access to sight tests for hard to reach groups
8. Share work, learning and recommendations with other networks

A questionnaire was distributed to all optometric practices in the region to inform and support this document (see Appendix). The aim of the questionnaire was to establish the extent of awareness amongst primary eye care providers regarding the particular issues surrounding the provision of eye health care to seldom-heard groups. The questionnaire was distributed to 312 practices, and there was a 10% response rate.

Previous work on seldom-heard groups, carried out by the Surrey and Sussex LEHN in 2016[50], was used to inform the priorities of the working group. This work identified 13 potential seldom-heard groups (Figure 10).

	People who can access GOS		People without access to GOS
1a.	Dementia patients	2a	Homeless people
1b	Care Home residents	2b	Refugees
1c.	People with learning disabilities	2c	Asylum seekers
1d	The Deaf and Hard of Hearing	2d	Travellers
1e	People whose first language is not English	2e	Prisoners
1f	People from ethnic minority communities		
1g	Looked after children		
1h	People who don’t have a regular sight test		

Figure 10: Proposed seldom-heard groups. Source: Surrey and Sussex LEHN[50]

5.6.1 Dementia

A significant number of people in the UK have both dementia and sight loss. It is estimated that there are 6,664 people in Wessex living with both dementia and significant sight loss[46]. This number is likely to increase as the population ages.

People with dementia are more likely to experience visual misinterpretations and hallucinations. Sight loss exacerbates the symptoms of dementia, impairing orientation, cognition and communication. Sight loss decreases quality of life and increases the care needs of this group.

People with dementia may be less likely to access eye health care, both for routine sight tests and for evaluation of symptoms. They may be also be less likely to be aware that they have problems with their sight.

The RCOphth has published a quality standard for people with sight loss and dementia in ophthalmology departments[51].

Within Wessex, a project has been carried out to make GP practices 'Dementia Friendly', and this project has also been extended to pharmacies. A small number of optometry practices within Wessex are Dementia Friendly, but this is not widespread.

5.6.2 Care home residents

Many of the challenges for patients with dementia also apply to care home residents. NHS domiciliary eye care is available for all care home residents, but this relies on care home managers recognising the need for regular sight tests in residents who may be unaware of, or unable to communicate, a problem with their vision.

A guidance document for domiciliary providers of GOS has been drafted by the NHS Wessex Area Team, but has not yet been distributed.

5.6.3 People with learning disabilities

Adults with learning disabilities are ten times more likely to have eye problems,[52] but are less likely to receive timely and appropriate care than the rest of the population.[53] Children with a learning disability are 28 times more likely to have a serious sight problem.[54]

There is no definitive record of the number of people with learning disabilities in the UK or Wessex. The presence of learning disabilities is not recorded in the decennial census of the UK population, and no government department collects comprehensive information on the presence of learning disabilities in the population.[53] SeeAbility estimates that there are 1,500,000 people with a learning disability in the UK, implying a population of around 62,630 people with learning disability in Wessex.

Sight tests are available to people with learning disabilities under GOS in the same way as for the general public. However, no additional fee is payable to contractors to compensate for the additional time that may be needed to administer the test, or the possibility that more than one appointment may be required to complete the test.

LOCSU have published a Community Learning Disabilities Pathway to aid in effective sight testing for people with learning disabilities.[55] SeeAbility provides

guidance and resources for providing eye care to children and adults with learning disabilities.

5.6.4 The deaf and those with hearing impairments

A service is available for the Deaf or those with hearing impairments. This service is contractor led with the contractor (and not the patient) deciding whether they need to access the service. The contractor contacts NHS England – South (Wessex) and enquires about the appropriate support required for the patient.

Accessibility of sight tests for these groups would be improved if testing takes place in facilities with working audio induction loops.

The following services are available for the Deaf or those with hearing impairments through Sonus:

- BSL interpreter
- Communicator
- Lipspeaker
- Notetaker
- Deaf/blind communicator

5.6.5 People whose first language is not English

A language barrier may present an impediment to communicating available NHS services, to understanding the particular needs or issues of an individual, and to carrying out investigation and treatment of eye health disorders. In Hampshire 0.5% of people cannot speak English well or at all (1.9% in Rushmoor) and in Dorset and 0.2% cannot speak English well or at all.

The Big Word, a telephone-based interpreting service, is available for use by GOS contractors in Wessex. Hospital trusts have their own interpreting/translation arrangements.

5.6.6 People from ethnic minority communities

This group is distinct from the group who do not speak good English; people from ethnic minority groups may not have a language barrier but may be isolated from health care services due to cultural differences. In addition, there is a higher prevalence of certain eye conditions amongst some ethnicities.

Just under 6% of people in Wessex belong to an ethnic minority.

5.6.6 Looked-after-children

There is a risk that children who move frequently may not have consistent medical records and may experience inconsistent care. Looked-after-children should be statemented and carry a red book up to the age of 16.

5.6.7 People who don't have a regular sight test

The best way to detect preventable sight loss early is through regular eye examinations. For the majority of working age adults, there is no access to NHS sight tests which are free at the point of delivery. This group, as well as those who do qualify for free sight tests but do not make use of the service, have more difficulty to engage with eye health services.

It is difficult to quantify the number of working age adults who do not have regular sight tests, as there is no central collection of such data. The number is believed to be substantial. The best way to engage such groups may include promotion within other areas of healthcare, such as general practice and pharmacy, as well as wider publicity campaigns.

5.6.8 Homeless people

Homeless populations have a higher prevalence of eye health issues than the general population, and there is a strong association between visual impairment and lower wellbeing as well as reduced earning potential.[56] A survey of 281 homeless people in London who received an eye test in 2014 found an ocular pathology in 32% and visual impairment in 12% (largely due to refractive error).[57]

Those in receipt of state benefits automatically receive free eye care but people who do not receive benefits may find access difficult. A principal barrier is that the lack of a fixed abode usually means that benefits and healthcare are not provided. They cannot access GOS if they are unable to provide an address, and to be referred to hospital services they would need to be referred by a GP. A homeless person may give an address, but that cannot be verified as a permanent fixed address by the optical practice, and may only come to light after the sight test was completed and could be considered as a fraudulent claim.

Within Wessex, NHS England has agreed to accept the address of a local homeless shelter for reimbursement of GOS.

The number of homeless people in Wessex is difficult to ascertain with any accuracy, and is constantly changing. Local authority figures record an estimate of 147 rough sleepers across Wessex in 2016, based on street counts[58]. This is likely to be a significant under-estimate. Between October and December 2016, Wessex Local Authorities processed 1038 benefits applications from eligible homeless applicants[59].

A project has been initiated by the LEHN Seldom-Heard Working Group to provide sight tests within local homeless shelters, under the domiciliary GOS contract.

5.6.9 Asylum seekers and refugees

Asylum seekers and refugees are eligible for GOS sight tests in the same way as any other UK resident, if they fulfil the usual criteria. Those who are not eligible (i.e. aged between 16 and 59, without any of the exemptions) may qualify for financial assistance through an HC1 or HC2 certificate. However, access to these services

may be challenging for people arriving from different countries in difficult circumstances.

5.6.10 Gypsy, Roma and Traveller communities

Wessex has a significant population of Travellers, although the exact population size is difficult to ascertain and (by the nature of the group) variable. The Traveller community may choose to be self-sufficient and may therefore choose not to access GOS services, or may not be aware of the importance of doing so. In addition, those without a permanent address may not be able to access GOS (see Section 5.6.8.).

First Steps is a charity operating in the New Forest to aid settled Gypsies and Travellers in accessing the services (including eye health care) which are available to them. Together with Hampshire County Council and New Forest District Council, they have produced a 'Health Passport' which aims to improve continuity between different healthcare providers.

Healthwatch has been engaging with the travelling community including a regular stand at the Wickham Fair.

The Forest Bus was a local charity which provided community development resources to Traveller communities, and could have provided a platform for mobile eye health services to such communities. Unfortunately, the charity recently lost its funding. However, University Hospitals Southampton has recently invested in a mobile medical retina suite which could be employed for this purpose. Alternatively, the Tooth Bus is a Hampshire service commissioned by NHS England and delivered by local Dental Clinics to provide free NHS dental checks in the community, and could be approached to work in partnership with the eye health services.

5.6.11 Prisoners

Prisoners do not generally have access to community health services, and are reliant on the healthcare services of their prison.

There are five prisons within Wessex:

- Guys Marsh, Shaftesbury (Cat C)
- Portland (Adult/YOI)
- IOW-Albany (Cat B)
- IOW - Parkhurst (Cat B)
- Winchester (Cat B & C)

Guys Marsh, Portland, The Verne and the Isle of Wight prisons all have health services provided by Care UK. HMP Winchester has health services provided by Central and North West London NHS Foundation Trust. Both organisations were contacted as part of this report, but neither were able to release data relating to eye health.

5.7 Comorbidities

5.7.1 Dementia

See Section 5.6.1.

5.7.2 Depression

Older people with sight loss are almost three times more likely to experience depression than people with good vision[60]. The Royal College of Psychiatrists estimates that 85% of older people with depression receive no help at all from the NHS.[61] Reducing avoidable sight loss is therefore important for reducing depression and improving wellbeing, but there must also be a focus on ensuring blind and partially sighted people have access to emotional support and rehabilitation services from the point of diagnosis onwards[62]. For more information, see the accompanying review paper, "Community-based Vision Rehabilitation Services in Wessex"[10].

Depression is a significant public health issue, with a prevalence of 9.4% in Wessex in 2016-17, based on QOF data[15] (this is likely to be an underestimate). There are currently 160,425 people with a diagnosis of depression in Hampshire / IOW, and 59,393 people in Dorset.

5.7.3 Diabetes

See Section 7 for a discussion of diabetic eye disease.

Currently across Wessex it is estimated that there are over 50,000 people with undiagnosed diabetes and there will be an additional 50,000 people with diabetes by 2035.[63]

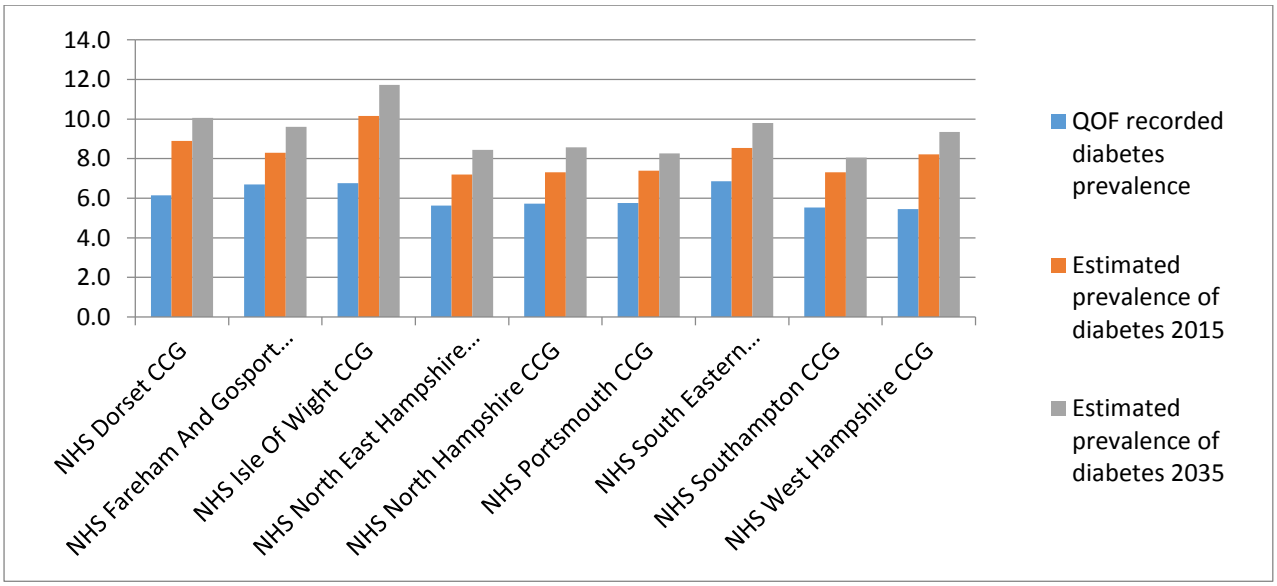

Figure 11: Percentage prevalence of diabetes in Wessex, by CCG, 2015 and 2035. Source: Public Health England[63]

Epidemiological studies indicate that the prevalence of diabetic retinopathy among people with diabetes mellitus (all types) is 30.0%.[64] This would equate to an additional 14,992 people in Wessex with diabetic retinopathy in 2035.

5.7.4 Falls

Sight loss is closely linked to falls. Boyce[65] estimates that 3.8% of falls resulting in hospital admission could be directly attributed to visual impairment, costing 10% of the total cost of treating accidental falls. It is estimated that 5,781 falls in Wessex during 2015 were directly attributable to sight loss, and that 453 of these falls required admission for hospital treatment[46]. It is noted that falls prevention is a priority for all STPs across Wessex.

5.7.5 Hypertension

Uncontrolled hypertension can lead to sight loss through ischaemic damage to the optic nerve and retina, and hypertension is an important preventable cause of sight loss. In Wessex, it is estimated that 685,441 people have hypertension, although less than two thirds of these are known to health care services[66] (see Figure 12). Wessex as a whole performs below the national average in treating hypertension[67] (see Figure 13).

	POPULATION		PREVALENCE					
CCG name	Total Population	Total Population (Age 16+)	Undiagnosed prevalence 16+	QOF Prevalence 2014/15	Undiagnosed estimated no.	QOF observed no.	Expected no.	Estimated expected prevalence per total population
NHS North East Hampshire and Farnham CCG	221,469	178,729	11.5%	13.0%	20,500	28,898	49,398	22.3%
NHS North Hampshire CCG	219,163	177,408	11.7%	12.4%	20,700	27,325	48,025	21.9%
NHS Fareham and Gosport CCG	201,155	165,615	12.5%	15.7%	20,800	31,585	52,385	26.0%
NHS Isle Of Wight CCG	141,738	119,758	13.5%	17.3%	16,150	24,565	40,715	28.7%
NHS Portsmouth CCG	217,026	178,380	11.2%	11.9%	20,000	26,083	46,083	21.2%
NHS South Eastern Hampshire CCG	210,199	173,516	12.7%	15.5%	22,050	32,576	54,626	26.0%
NHS Southampton CCG	268,953	222,346	11.1%	10.9%	24,600	29,387	53,987	20.1%
NHS West Hampshire CCG	547,054	452,419	12.5%	14.6%	56,350	79,863	136,213	24.9%
NHS Dorset CCG	782,581	658,729	12.7%	15.4%	83,650	120,359	204,009	26.1%
Wessex	2,809,338	2,326,900	12.1%	14.1%	284,800	400,641	685,441	24.1%

Figure 12: Observed and expected prevalence of hypertension in Wessex, by CCG, 2014/15. Source: Public Health England[66]

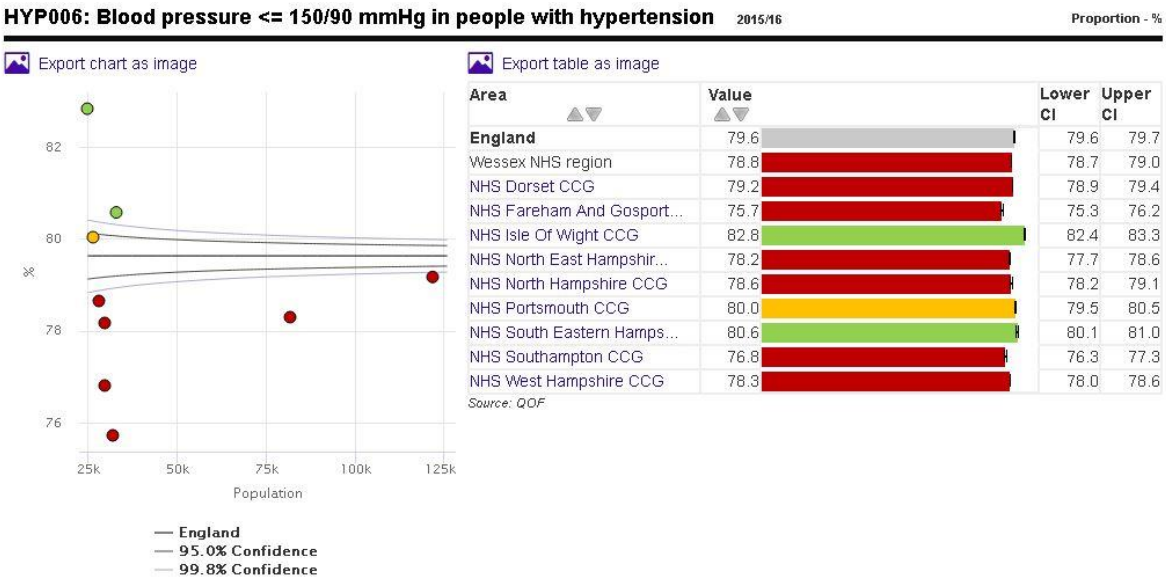

Figure 13: Percentage of patients in Wessex with hypertension, having a blood pressure of less than or equal to 150/90 mmHg, by CCG. Source: Quality and Outcomes Framework 2015-16[67]

5.7.6 Smoking

The link between smoking and sight loss is as strong as the link between smoking and lung cancer. Smoking is associated with a three-to four-fold increased risk of AMD[68], and there is a clear causal relationship between the two, as measured by the Bradford-Hill criteria.[69] There are also strong associations between smoking and cataract formation, thyroid eye disease, and diabetic retinopathy.[70]

However, there is little public awareness of the link between smoking and sight loss. A study of 402 British hospital attenders found that only 9.5% of patients believed that smoking was definitely or probably a cause of blindness, compared with 92.2% for lung cancer, 87.6% for heart disease, and 70.6% for stroke.[71] In fact, the increased risk of sight loss from macular degeneration in smokers is more than double the increased risk of ischaemic heart disease amongst male smokers.[71]

A study of 283 British teenagers aged 16-18, attending four different youth functions in Southampton, Bournemouth, Winchester and Manchester, found that only 5.4% of respondents believed there was a link between smoking and blindness, compared with 15% for deafness (there is no recognised causal association between smoking and deafness).[72] The study also found that when respondents were asked to rank a selection of medical conditions in order of fear of developing them, there was a significantly higher fear of blindness compared with other more recognised consequences of smoking. (Figure 14)

In Wessex, there are significant numbers of regular smokers, with highest proportions (21% - 27%) in the Southampton and Portsmouth City CCGs (Figure 15). These findings suggest that the visual consequences of smoking could be effectively

incorporated into smoking cessation initiatives, in order to achieve synergy in public health promotion.

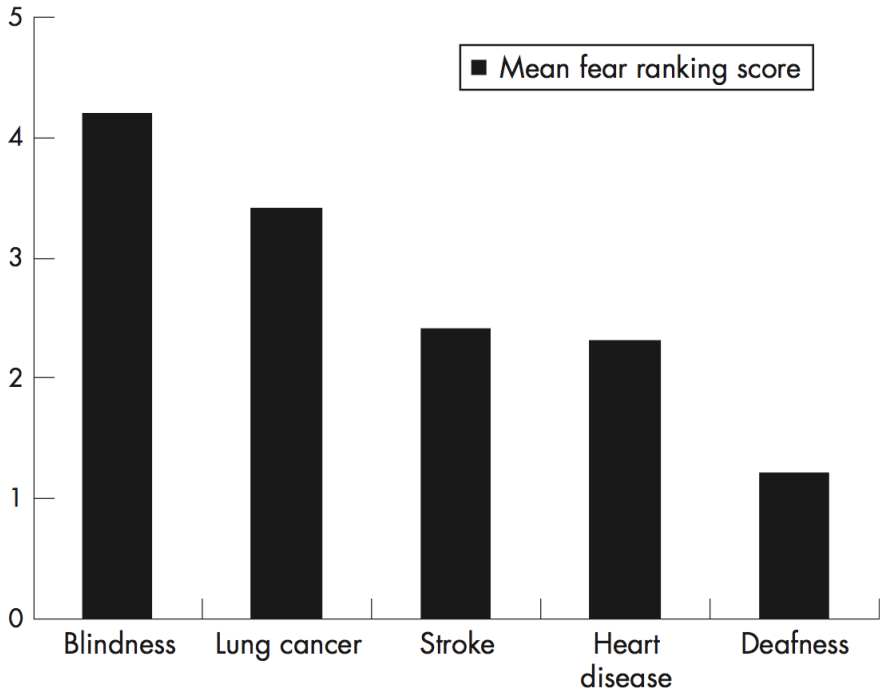

Figure 14: Mean score for fear of developing smoking attributable conditions among teenagers. Source: Moradi, P. et al. (2007).[72]

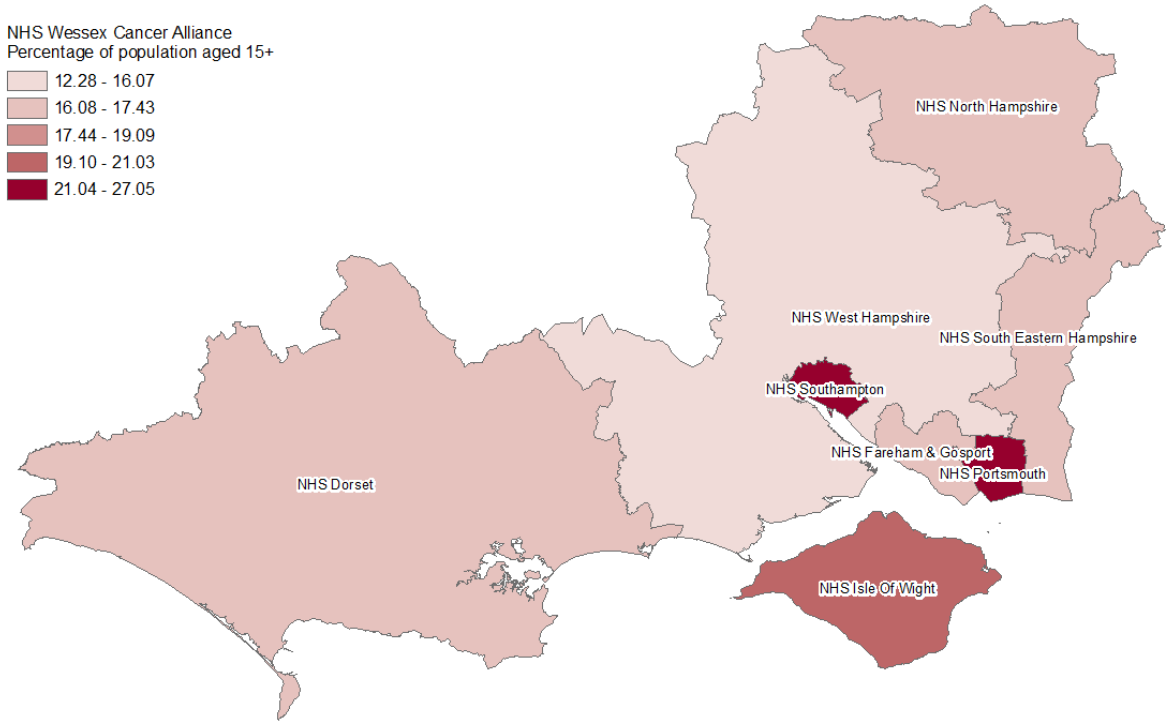

Figure 15: National Quintiles for QOF estimated smoking prevalence, persons, percentage of population aged 15 and over by CCG, 2014/15. Source: NHS Wessex Cancer Alliance

5.7.7 Stroke

Almost 70% of people who suffer stroke will also experience some form of visual dysfunction, most commonly a visual field defect.[73] Other symptoms may include double vision, nystagmus and oscillopsia (wobbly vision), or an inability to read, write, or recognise faces. However, existing evidence suggests 45% of stroke services provide no formal vision assessment for stroke patients.[74]

Given that there are an estimated 13,556 people in Wessex over the age of 65 who have had a significant stroke (9,101 in Hampshire/IOW, 4,455 in Dorset)[75] there may be 9,489 people in Wessex who have experienced some form of visual dysfunction following a stroke.

6. Current services and eye care workforce

6.1 Primary eye care

The term 'Primary Eye Care' can cover both urgent and routine care provided in a setting which is convenient for patients[23], and may include:

- Managing a wide range of low risk primary eye conditions
- Addressing the needs of a patient presenting with an acute eye condition (first contact)

- Conducting re-checks to confirm abnormal test results detected by an NHS eye examination (as outlined in the NICE glaucoma standard, QS7)[76,77]
- Further refining the decision to refer, e.g. where risks and benefits are discussed with the patient prior to referral for cataract surgery.

Most primary eye care is already delivered in optical practices. However, in many areas, there are no effective primary and community services to free up Hospital Eye Service (HES) capacity.

Primary eye care is delivered by a wide variety of different professionals, including optometrists, ophthalmic medical practitioners / ophthalmologists, dispensing opticians, general practitioners (including those with an interest in ophthalmology), pharmacists, orthoptists and ophthalmic nurses.

Compared with other specialties, more primary care in ophthalmology has traditionally taken place in the hospital setting rather than in general practice because of a lack of equipment (particularly slit lamps) as well as a paucity of the relevant skills and ophthalmic knowledge.[78–82]

The role of optometry in primary eye care is steadily growing. Traditionally limited to carrying out NHS treatment only on patients who were eligible for an NHS sight test (See Section 6.1.1), an increasing number of optometrists are now being commissioned to carry out NHS assessment, triage, and treatment of minor eye conditions. A recent report concluded that “the NHS is likely to be commissioning more community eye care services from optometrists in the 2020s.”[83] These services need to be commissioned separately from General Ophthalmic Services.

The Clinical Council for Eye Health Commissioning has published recommended frameworks for primary eye care; both for first contact care[23] and community ophthalmology services[22]. They recommend that the building of primary eye care capacity should be commissioned at a population level which covers multiple CCGs, in order to have maximum impact and cost effectiveness, and to avoid reduplication of services and variation in care for patients who cross CCG boundaries.

6.1.1 General Ophthalmic Services

Some basic primary eye care is contracted nationally by NHS England under the General Ophthalmic Services (GOS) contract. The service provides on-demand preventative and corrective eye care for patients, largely in a high street setting. The service may only be provided by an optometrist registered with the General Optical Council, or by a doctor registered with the General Medical Council. In addition, the practitioner must be on the Ophthalmic Performers list in England (being on the ophthalmic performers list in Wales, for example, does not allow a practitioner to perform GOS in England).

The sight test has two stated purposes:

- To provide a prescription for glasses or contact lenses to correct refractive error
- To check the internal and external health of the eye

Free NHS sight tests are available to those who:

- are under 16
- are 16, 17 or 18 and in full-time education
- are 60 or over
- are registered as partially sighted or blind
- have been diagnosed with diabetes or glaucoma
- are 40 or over and have a mother, father, sibling or child who has been diagnosed with glaucoma
- have been advised by an ophthalmologist that they're at risk of glaucoma
- are a prisoner on leave from prison
- are eligible for an NHS complex lens voucher
- Have a low income

The recommended frequency of sight tests is not formally stated in the contract, but a memorandum of understanding stipulates agreed minimum intervals such as every 2 years for adults under 70, and every year for adults over 70 and children under 16. Tests may be performed more frequently at the discretion of the practitioner, if deemed clinically appropriate[84].

Number of NHS sight tests in (2015/16)	Number of NHS sight tests recorded for people aged 60 years and over (2015/16)	Number of NHS sight tests recorded for people aged 0-15 (2015/16)	Number of NHS sight tests recorded for students aged 16-18 (2015/16)	Number of NHS sight tests recorded for benefit claimants - specifically Income Support, Tax Credits and Job Seekers Allowance (2015/16)	Estimated rate of NHS sight tests per 100,000 population (2015/16)	Estimated rate of NHS sight tests for people aged 60 years and over per 100,000 population (2015/16)	Estimated rate of NHS sight tests for children per 100,000 population (2015/16)
614,111	302,899	106,948	20,850	58,308	22,393	42,034	22,001

Figure 16: NHS sight tests in Wessex 2015/16. Source: Health and Social Care Information Centre[85], as presented in the RNIB Sight Loss Data Tool[46].

Within Wessex, there were 614,111 NHS sight tests in the year ending April 2016. This represents 22.4% of the eligible population. The rate of NHS sight tests for children, who should be having a sight test every year, was 22% per year.

6.1.2 Optometry

There are 492 optometrists active in the Wessex area as of January 2017.[86] The majority of optometric practices are clustered in and around the large population centres of Bournemouth, Southampton and Portsmouth, with a notable sparsity in

west Dorset, northwest Hampshire and the New Forest (See Figure 17). This may contribute to variation in access to GOS and primary eye care across the region, and could become an even more significant issue if optometry is commissioned to provide a wider range of NHS services in the future.

The University of Portsmouth started offering an optometry course (MOptom) in 2016. It is hoped that this will help to increase the number of optometrists taking up posts in the area as the first cohort of optometrists begin to graduate in 2020.

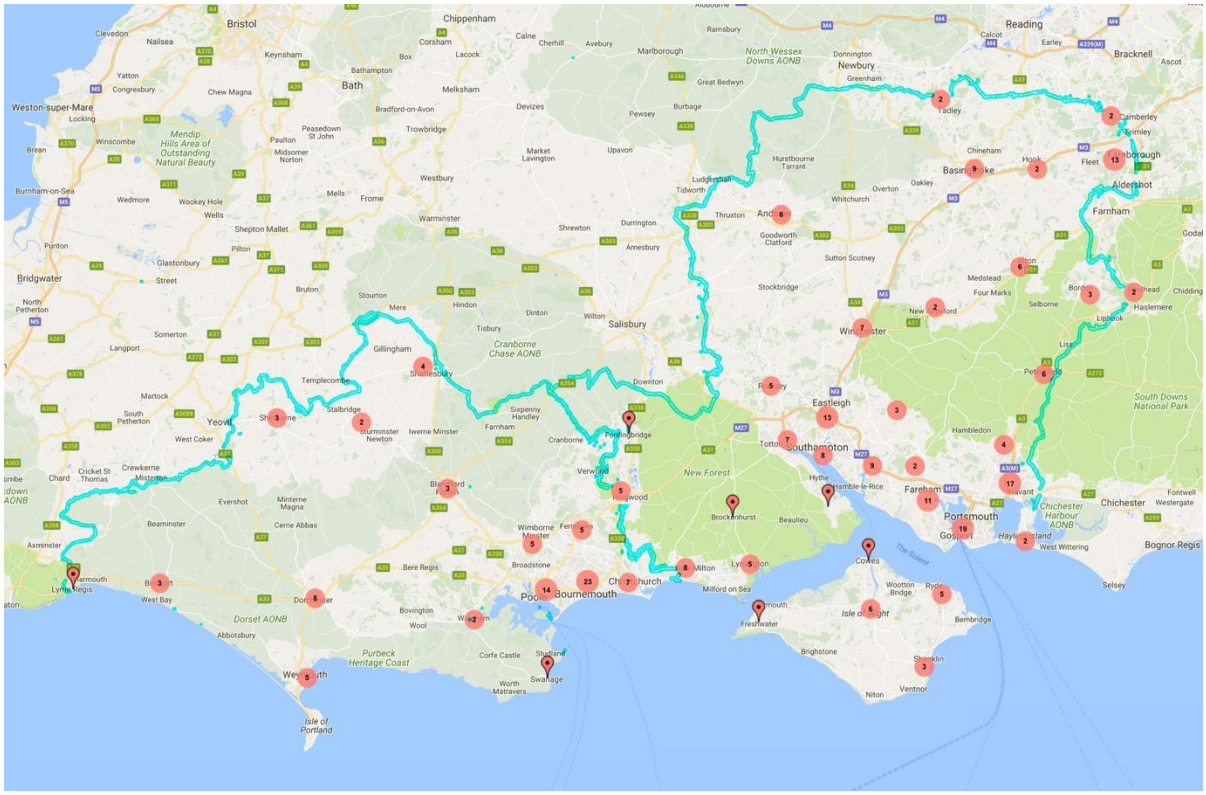

Figure 17: Location of optometric practices in Wessex as of November 2017. Pins represent single practices, numbers represent clusters of practices within a small geographic area. Data: NHS England. Mapping: Easymapmaker.com and Google Maps.

6.2 Intermediate care

A Community Ophthalmology 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 caseload.

A Community Ophthalmology Service will have some or all of the following characteristics:

- The ability to make definitive diagnoses to manage and treat the majority of cases referred into it
- Be effective as a monitoring service for patients at risk of their condition deteriorating asymptomatically
- Provide an access point for patients with recurrent symptomatic disease.

What can be treated in a Community Ophthalmology Service depends on the skill set available within the service and the risk of deterioration of the patient's condition but will typically include:

- a wide range of anterior segment conditions such as conjunctival or corneal conditions, anterior uveitis and lid conditions
- glaucoma within the context of NICE (1) guideline
- retinal disease such as surveillance of diabetic retinopathy and other retinal conditions that need monitoring outside any screening service
- children with amblyopia and squint

Healthcare professionals who wish to perform extended clinical roles in Community Ophthalmology Services must undergo the necessary training to obtain nationally approved qualifications for assurance of competency as specified by, or equivalent to those specified by the relevant professional bodies and demonstrate maintenance of competence through continuing professional development thereafter.

6.2.2.1 Higher qualifications for optometrists

The College of Optometry's higher qualifications enable optometrists to offer enhanced services, take on more responsibility, and progress in their careers. Successful candidates can use the appropriate affixes.

There are 3 levels:

1. Professional Certificate
2. Higher Professional Certificate
3. Professional Diploma

These higher qualifications are available in:

- Contact lenses
- Glaucoma
- Medical retina
- Low vision
- Paediatrics

The most relevant of these from a service commissioning and delivery perspective are the 3 different levels of higher glaucoma qualifications because the NICE accredited Royal College of Ophthalmologists and Clinical Council for Eye Health commissioning guidance on glaucoma services published in June 2016 define the level of qualification required for different levels of case finding, diagnosis, monitoring, management & treatment.

6.2.2.2 Independent prescribing optometrists

In March 1999, the final report of the Review of Prescribing, Supply and Administration of Medicines recommended that optometrists should be granted independent prescribing responsibilities. In June 2007, the Commission for Human Medicines accepted the following recommendation by a working group;

"Optometrist independent prescribers should be able to prescribe any licensed medicine for ocular conditions, affecting the eye and adnexa, within the recognised area of expertise and competence of the optometrist."

Changes to the POM Order came into effect on 4th June 2008 and amendments to the GOC Registration Rules came into effect on 11 August 2008

The General Optical Council (GOC) hold a register of IP optometrists.[87] A search of this register revealed 8 IP optometrists registered in Dorset and 9 in Hampshire as of March 2017.

6.2.3 General practitioners

There are 2023 GPs active in Wessex as of July 2017 (1,635 full time equivalents)[88].

A 2014 survey found under-confidence among GP respondents in diagnosing common ophthalmic conditions.[89] 34.1% were confident that they could spot the symptoms or signs of age related macular degeneration, 48.8% were confident that they could spot the symptoms or signs of diabetic retinopathy, 49.3% were confident in identifying refractive error and 51.2% were confident in identifying glaucoma.

There are six GPs with a special interest in ophthalmology (GPSI's) active in Wessex – four in East Dorset, one in Southampton and one in Waterlooville.

6.2.4 Ophthalmic medical practitioners

There are 6 Ophthalmic Medical Practitioners active in Wessex as of July 2017[88]. OMPs are ophthalmologists who undertake NHS sight tests under the General Ophthalmic Services contract. Like optometrists, they examine eyes, test sight, diagnose abnormalities and prescribe suitable corrective lenses. Some OMPs also work in the Hospital Eye Service or as General Practitioners or in other health care settings.

6.3 Secondary and tertiary care

Hospital ophthalmology services are delivered by 8 main providers across Wessex:

- Dorset County Hospital NHS Foundation Trust
- The Royal Bournemouth and Christchurch Hospitals NHS Foundation Trust
- Isle of Wight NHS Trust
- Hampshire Hospitals NHS Foundation Trust
- University Hospital Southampton NHS Foundation Trust

- Portsmouth Hospitals NHS Trust
- Southern Health NHS Foundation Trust
- St Mary's NHS Treatment Centre

In addition to these providers, there are a number of other providers offering NHS services within the region as part of their operations. St Mary's NHS Treatment centre in Portsmouth, run by Care UK, offers a range of ophthalmology services. Solent Medical Services provide a community ophthalmology service in Southampton. Spire Portsmouth and Spire Southampton hospitals offered NHS patients ophthalmology consultations and cataract surgery through the NHS Choices scheme until recently, but have now ceased this service. The Harbour Hospital in Poole & the Winterbourne Hospital in Dorchester offer cataract surgery through the NHS Choose & Book programme.

6.3.1 Workforce

There are 124 doctors working in hospital ophthalmology within Wessex[90] (see Figure 18). In addition to this workforce there are a significant number of orthoptists, optometrists, ophthalmic nurses, photographers, healthcare assistants, and other ancillary specialists including ocular prosthetic technicians. Data for this workforce are not kept centrally, and would have to be collected from each trust.

Organisation	Consultant	Associate Specialist	Specialty Registrar	Specialty Doctor	Staff Grade	Core Training	FY2	FY1	Ophthalmology
Dorset County Hospital NHS Foundation Trust	4			1	1				6
Hampshire Hospitals NHS Foundation Trust	10	1	2	6					19
Isle of Wight NHS Trust	2		1	3					6
Portsmouth Hospitals NHS Trust	15		9	2			1		27
Royal Bournemouth and Christchurch Hospitals NHS Foundation Trust	13	2	5	2			2		24
Salisbury NHS Foundation Trust	7		4						11
University Hospital Southampton NHS Foundation Trust	19		17	5			1		42
HEE Wessex Total	70	3	38	19	1	0	4		135

Figure 18: Numbers of doctors in hospital ophthalmology within HEE Wessex, June 2017. [Note: HEE Wessex includes Salisbury NHS Foundation Trust, which is in Wiltshire and is therefore not included in this needs assessment]. Source: NHS Digital[90]

6.3.2 Activity levels

Data for Hospital Eye Service activity levels were sourced from Hospital Episode Statistics, and the reliability of the figures was confirmed through direct correspondence with the Business Intelligence departments of the four largest trusts in the region (which together account for around 80% of total activity).

6.3.2.1 Outpatient services

There has been a significant increase in hospital outpatient activity within ophthalmology in recent years (Figure 19). Since 2013, outpatient activity has risen by a third across Wessex. At the regional tertiary referral centre, University Hospitals Southampton, outpatient activity has risen by 79% since 2013 and the department now sees an average of 385 patients in its outpatient department every working day.

Self-reported activity figures are generally higher than those recorded by HES, and there is a significant discrepancy between the two data sources for Portsmouth Hospitals and Hampshire Hospitals.

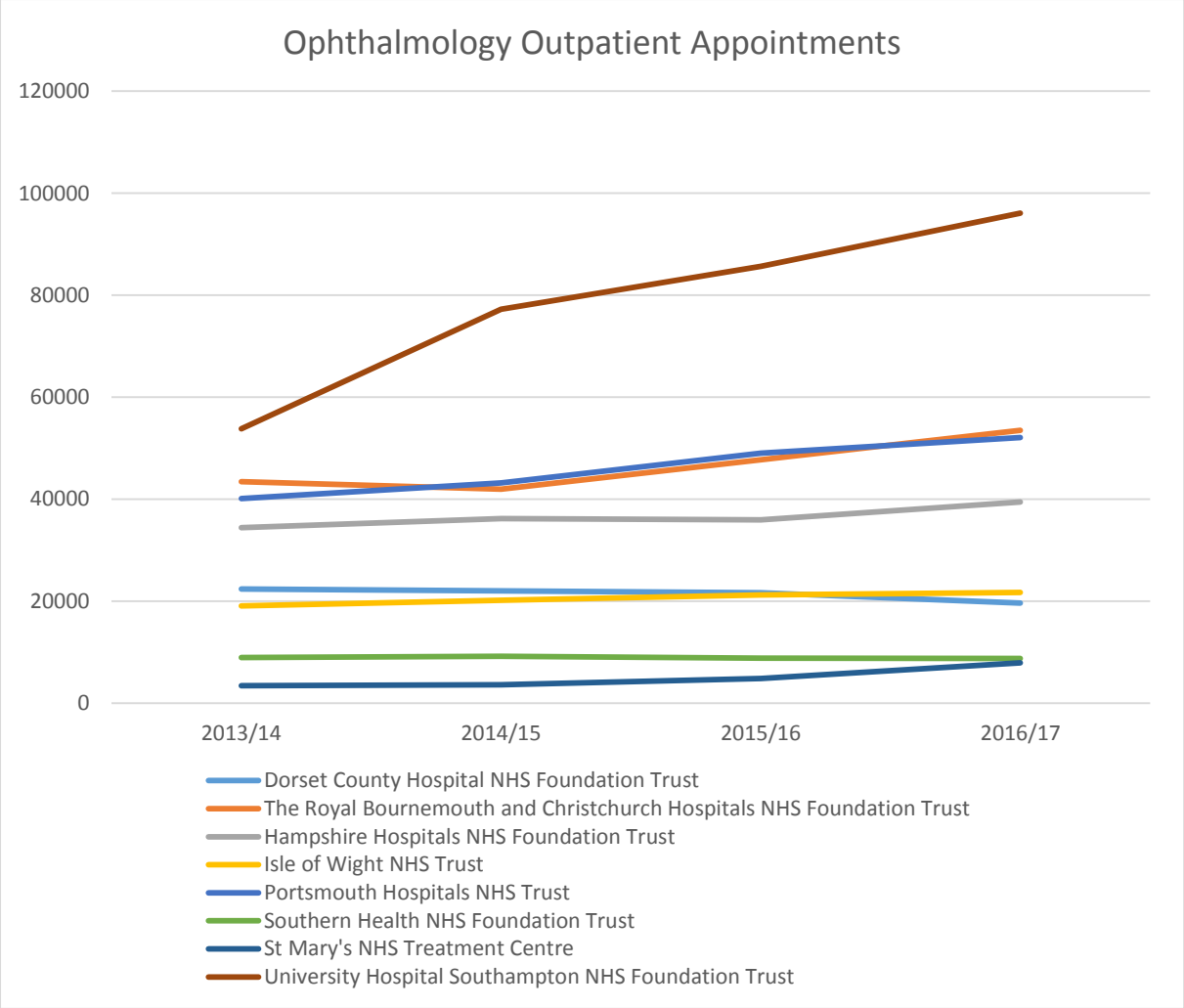

Figure 19: Outpatient attendances for ophthalmology in the financial years 2013 -17 for each of the NHS trusts within the region. Source: Hospital Episode Statistics[91]

	2013-14	2014-15	2015-16	2016-17	Change 2013-17
Dorset County Hospital NHS Foundation Trust	22,391	21,999	21,677	19,610	-12%
Hampshire Hospitals NHS Foundation Trust	34,422	36,221	35,945	39,460	+15%
Isle of Wight NHS Trust	19,069	20,155	21,248	21,736	+14%
Poole Hospital NHS Foundation Trust	2,538	2,542	2,557	2,568	+1%
Portsmouth Hospitals NHS Trust	40,097	43,212	49,018	52,091	+30%
Southampton NHS Treatment Centre	1,332	1,326	1,318	924	-31%
Southern Health NHS Foundation Trust	8,968	9,197	8,809	8,755	-2%
St Mary's NHS Treatment Centre	3,408	3,633	4,838	7,902	+132%
The Royal Bournemouth and Christchurch Hospitals NHS Foundation Trust	43,431	41,966	47,748	53,500	+23%
University Hospital Southampton NHS Foundation Trust	53,815	77,236	85,638	96,108	+79%
Total	229,471	257,487	278,796	302,654	+32%

Figure 20: Outpatient attendances for ophthalmology in the financial years 2014 -17 for each of the NHS trusts within the region, as recorded by Hospital Episode Statistics[11]

	2014-15	2015-16	2016-17
Hampshire Hospitals NHS Foundation Trust	40,344	41,292	43,623
Portsmouth Hospitals NHS Trust	46,311	52,492	55,354
The Royal Bournemouth and Christchurch Hospitals NHS Foundation Trust	42,030	47,777	48,672
University Hospital Southampton NHS Foundation Trust	78,012	87,091	95,884

Figure 21: Outpatient attendances in the financial years 2014 -17 for the four largest NHS Trusts in the region, as reported by the trusts.

6.3.2.2. Inpatient services

Inpatient activity has been relatively static across the region since 2014 (Figure 22). There is a significant discrepancy in rates of inpatient activity as a proportion of total activity between trusts; this is likely to be largely due to the way in which intravitreal injection procedures are recorded: in University Hospitals Southampton they are recorded as part of outpatient activity, while at Portsmouth Hospitals and The Royal Bournemouth and Christchurch Hospitals the injections are performed as inpatient procedures.

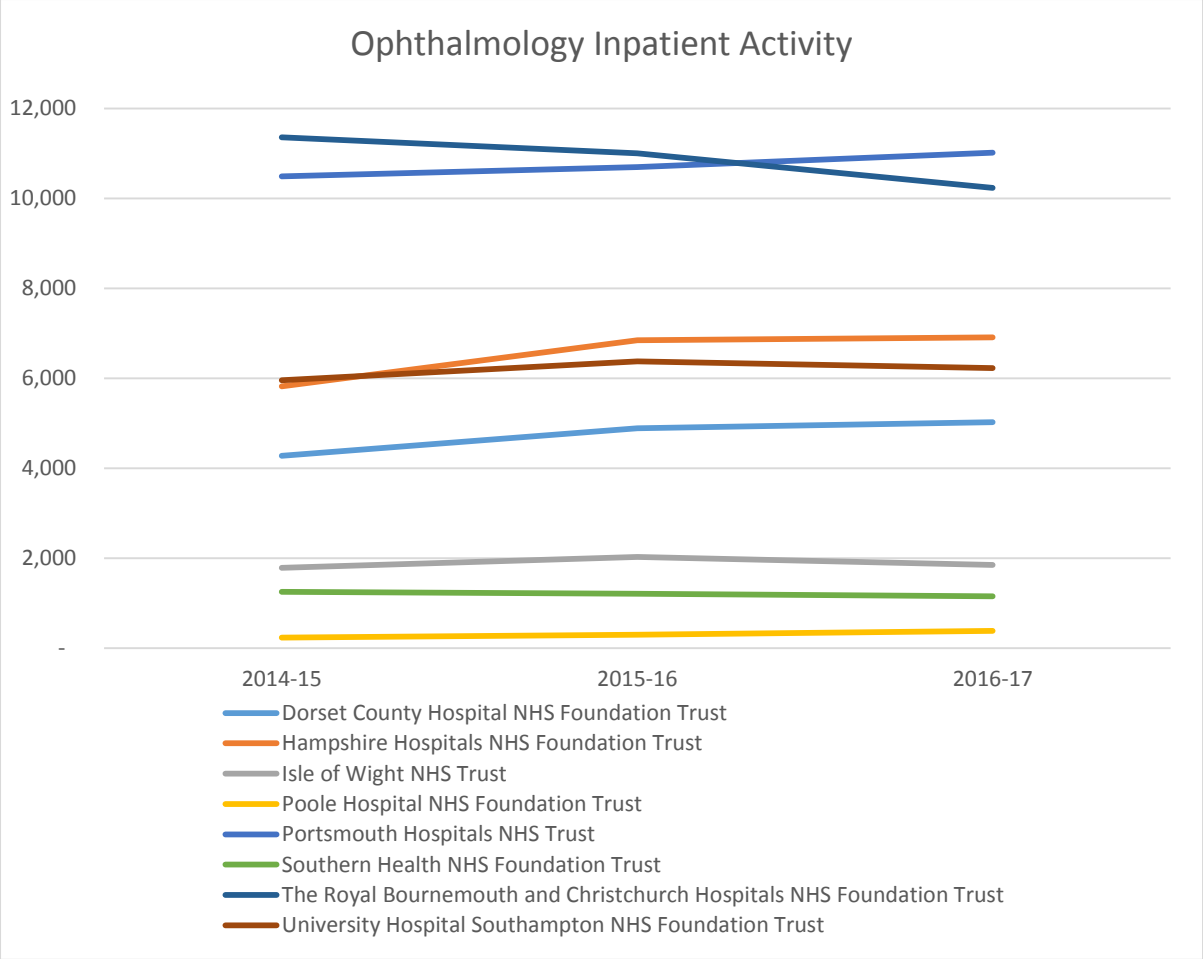

Figure 22: Inpatient episodes for ophthalmology in the financial years 2013 -17 for each of the NHS trusts within the region. Source: Hospital Episode Statistics[91]

	2014-15	2015-16	2016-17	Change 2014-17
Dorset County Hospital NHS Foundation Trust	4,278	4,888	5,029	+18%
Hampshire Hospitals NHS Foundation Trust	5,826	6,848	6,914	+19%
Isle of Wight NHS Trust	1,787	2,031	1,853	+4%
Poole Hospital NHS Foundation Trust	236	299	382	+62%
Portsmouth Hospitals NHS Trust	10,492	10,698	11,018	+5%
Southern Health NHS Foundation Trust	1,254	1,214	1,157	-8%
The Royal Bournemouth and Christchurch Hospitals NHS Foundation Trust	11,364	11,006	10,237	-10%
University Hospital Southampton NHS Foundation Trust	5,960	6,380	6,230	+5%
Total	41,197	43,364	42,820	+4%

Figure 23: Admissions (First Finished Consultant Episodes) with a primary diagnosis of an eye related condition, in the financial years 2014 -17 for each of the NHS trusts within the region, as recorded by Hospital Episode Statistics. Source: HES request. Codes: H00-H59, Q10-Q15, C69, T26, S05, E10.3, E11.3, E13.3.

	2014-15	2015-16	2016-17
Hampshire Hospitals NHS Foundation Trust	5,042	5,813	5,802
Portsmouth Hospitals NHS Trust	9,304	9,466	9,933
The Royal Bournemouth and Christchurch Hospitals NHS Foundation Trust	12,151	10,830	9,787
University Hospital Southampton NHS Foundation Trust	5,190	5,773	5,608

Figure 24: Inpatient admissions under an ophthalmic consultant in the financial years 2014 -17 for the four largest NHS Trusts in the region, as reported by the trusts.

6.3.2.4. Emergency services

Hospital-based emergency eye care is administered in the same way as the wider Accident & Emergency services, and data are collected as part of A&E. No HES data are available for trust-level emergency eye care activity.

Data reported by the four largest trusts in the region show an overall increase in activity by 8%, caused by significantly increased activity in The Royal Bournemouth and Christchurch Hospitals and University Hospitals Southampton.

	2014-15	2015-16	2016-17	Change 2014-17
Hampshire Hospitals NHS Foundation Trust	3,959	4,070	3,770	-5%
Portsmouth Hospitals NHS Trust	9,992	9,918	9,777	-2%
The Royal Bournemouth and Christchurch Hospitals NHS Foundation Trust	15,732	16,762	18,023	+15%
University Hospital Southampton NHS Foundation Trust	22,299	24,014	24,521	+10%
Total	51,982	54,764	56,091	+8%

Figure 25: Emergency eye clinic attendances in the financial years 2014 -17 for the four largest NHS Trusts in the region, as reported by the trusts.

6.4 Coordination of eye and vision services

6.3.1 The relationship between general practice and ophthalmology

A 2015 survey found that there is confusion among patients about whether to seek advice from a GP, an optometrist, a pharmacist or A&E about an eye complaint[92], and this confusion appears to be shared by primary care providers. There is significant variability in patient pathways through primary care, and it is not uncommon for patients to be referred between several different eye care providers before receiving definitive treatment.

It is common practice in many areas within Wessex for optometrists, having identified an abnormality which may require specialist ophthalmic assessment, to correspond with the patient's GP requesting that they refer the patient for ophthalmic review. This introduces extra cost and delay in the referral process and is contrary to the General Ophthalmic Mandatory Services contract[93] which states [emphasis added] that:

> "Where the Contractor or an ophthalmic practitioner employed or engaged by it to perform the Contract is of the opinion that a patient whose sight has been tested
>
> 31.1. shows on examination signs of injury, disease or abnormality in the eye or elsewhere which may require medical treatment; or
>
> 31.2. is not likely to attain a satisfactory standard of vision notwithstanding the application of corrective lenses, it shall, if appropriate, and with the consent of the patient —
>
> 31.3 refer the patient to an ophthalmic hospital, which includes an ophthalmic department of a hospital,
>
> 31.4. inform the patient's doctor or GP practice that it has done so, and
>
> 31.5. give the patient a written statement that it has done so, with details of the referral."

Optometrists working in optical practices do not currently have N3 connection so have no access to the e-referral process or nhs.net e-mail accounts so they have no option other than sending paper referrals.

Within North Hampshire and Southampton City CCGs, there is now the facility for GPs to refer patients to participating optometrists through the MECS scheme, which can also be accessed directly by patients without the need for referral. It is hoped that MECS schemes will help to improve communication infrastructure and service coordination between primary and secondary care.

6.4.2 Collection of data

NHS ophthalmic healthcare is predominantly an out-patient delivered service. There is a need to improve and develop eye health data across STPs, notably the Hospital Episode Statistics for out-patient attendances. Data for diagnosis and procedure is not routinely coded for outpatient episodes as it is for inpatient episodes (nor is it mandated to be), thereby rendering these data incomplete and inaccurate – yet out-patient attendance data are used as proxies for need, service development and commissioning decisions.

Furthermore, there is no common data collection platform between hospital ophthalmology and community optometry, and no way in which to link patient records between the two. There is no centralised data collection for non-NHS eye tests.

6.4.3 Sharing of data

There is currently variable communication between the different providers of eye health care, and no way of accessing patient records across NHS trusts or between hospital eye services and primary care.

There is no routine communication between hospital eye services and optometry; a copy of correspondence to the patient's GP may be posted to the patient's optometrist at the discretion of the examining clinician, but this is not commonplace. There is currently no way to automate this activity, as details of a patient's optometrist are not routinely collected by ophthalmology departments. Thus, optometrists reviewing a patient in the community generally have no access to their prior medical records or to any details of previous ophthalmic care or care plans. This is likely to present a significant obstacle to closer collaboration between hospital ophthalmology and community optometry in the future.

6.5 Eye care pathways and contracted services

Care pathways may be employed with the aim of more effectively integrating primary and secondary care, and relieving the burden on Hospital Eye Services by improving the efficiency of care for common conditions. Three widely recognised[23] care pathways are:

- Glaucoma repeat measures pathway[94] – commissioned by Dorset CCG, Fareham and Gosport CCG, Isle of Wight CCG, North East Hampshire & Farnham CCG, and North Hampshire CCG.
- Integrated cataract pathway[23] – commissioned by North East Hampshire and Farnham CCG
- Minor eye conditions pathway[95] – Commissioned by North Hampshire CCG and Southampton City CCG.

In addition, stable glaucoma monitoring services are commissioned by Dorset CCG, South East Hampshire CCG and Fareham and Gosport CCG. A glaucoma referral refinement scheme is commissioned by Portsmouth CCG.

A comprehensive Wessex service mapping exercise was not performed as part of this needs assessment, and would be a very useful addition to local resources.

6.5.1 MECS / PEARS

Traditionally, primary eye care has been performed by GPs (with varying levels of ophthalmic experience and expertise), by optometrists (with more experience and expertise, but no mechanism for remuneration outside the GOS contract), or by hospital ophthalmology services.

Minor Eye Conditions Schemes (MECS; also known as Primary Eyecare Assessment and Referral Service, or PEARS) are schemes whereby accredited practitioners (usually optometrists) are commissioned to provide assessment and

treatment of minor eye conditions which would otherwise have required referral to hospital eye services. Patients can self-refer or be referred into the service by their own GP (or the practice nurse or surgery receptionist), Pharmacist, Optometrist, NHS111, A&E or Eye Clinic/Eye Casualty by arrangement. There is a list of participating optometrists for the patient to choose from. Optometrists must, within reason, be able to offer an acute MECS examination within 48 hours of the day that the appointment has been requested by the GP or pharmacist (excluding weekends and public holidays) unless it is for routine assessment. Where this is not possible, the patient should be directed to a colleague nearby.

There are a large number of putative benefits of a commissioned MECS, including[23]:

- Provision of safe and effective care by appropriately trained and competent professionals
- Delivery of high quality clinical services that ensure patient safety and a positive patient experience
- Ongoing development of the current and future workforce supported by receipt of feedback to the practitioner following referral
- Reconfiguration of patient flows to make best use of available resources and skills
- Embedding governance structures into the service
- Provision of clinical services in a setting closer to home or work
- Reduction of referrals to HES to reduce waiting times for outpatient appointments and/or enable greater capacity for the care of higher risk patients
- Integration with other parts of service
- Empowerment of patients through education and self-care
- Support for a seven day service across an area

There are 116 accredited MECS practitioners in Hampshire as of October 2017, and this number is increasing as more optometrists complete training.

The North East Hampshire and Farnham PEARS scheme was established in 2013 and is the only such scheme in the region which has a track record. The scheme has seen a steady year-on-year increase in activity since inception, with 2763 patient episodes in 2017. Of these, 57% were discharged and 20% were referred to the local HES.

The most common conditions recorded by the NEHF PEARS scheme in 2017 were ‘Other’ (of which the majority were migraine), Posterior Vitreous Detachment, Meibomian Gland Dysfunction and Dry Eye.

Informal conversations with ophthalmologists in the Basingstoke and North Hampshire Hospital, and with the Hampshire LOC, suggest feelings on both sides of the scheme that it has been modestly successful in reducing activity within HES. Hampshire Hospitals Trust has not seen the increase in emergency eye care activity that has been seen in Southampton and Bournemouth. However, Portsmouth Hospitals, which does not have a commissioned MECS scheme, has also not seen a rise in emergency activity.

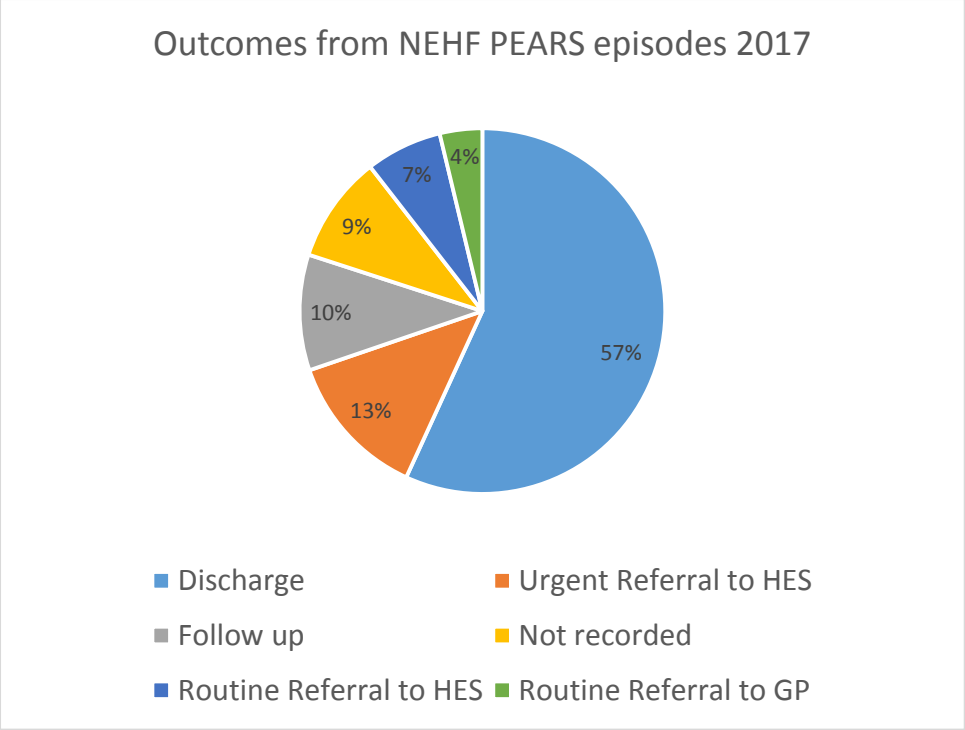

Figure 26: Outcomes of attendances to the North East Hampshire and Farnham PEARS service in 2017. Source: NEHFCCG

A MECS was launched by Southampton City CCG on 1st April 2017. The scheme has seen a steady uptake, and as of November 2017 is seeing approximately 40 patients per month.

An assessment of the possible impact of a MECS in Dorset was made by the Royal Bournemouth Hospital in 2014[96], with the cautious conclusion that it could achieve costs savings over the current service. The authors remarked, however, that the costs of inappropriate referrals and staff training were difficult to predict. In addition, there was a concern over the possibility of creating supplier-induced demand, whereby patients who are currently treated with verbal advice over the telephone triage service might represent an additional billable expense under a MECS.

6.5.2 Community ophthalmology services

Community ophthalmology services have been commissioned in Dorset and parts of Hampshire by CCGs.

In Dorset, the contract for providing COS has recently been awarded to a private company, Evolutio Care Innovations Ltd, to start in April 2018.

In Southampton City, there is a COS provided by Solent Medical Services, an NHS-Staff owned private company, and based at the Newtown Clinic.

In Portsmouth City, there is a COS provided by Care UK and based at St Mary's Treatment Centre.

6.6 Eye Clinic Liaison Officers (ECLOs)

The need for information and support at the time of vision impairment diagnosis has long been recognised[60,97] and although patchy has been undertaken informally by a range of individuals including ophthalmic nurses, local society workers and unpaid volunteers. This has led to the creation of the role of Eye Clinic Liaison Officer (ECLO) by the RNIB, starting in 2009[98].

The role of ECLOs varies by post, but generally focuses on:

- Advice about registration and certification
- Information on eye conditions
- Emotional support
- Referral to other agencies (e.g. social care)
- A bridge between clinical and social services
- Family support

In addition, ECLO's may assist with more technical challenges, such as eye drop compliance or low level diabetes management.

An analogy can be drawn between ECLOs and Macmillan nurses, although the former do not usually have nursing training.

Within Wessex, the following services are currently available:

- Dorset County Hospital: No ECLO, or plans for an ECLO. Currently role performed by adult social services.
- Royal Bournemouth Hospital: A sight-loss advisor employed 3.5-4 days per week. Does not assist with CVI's. As of January 2018 employed by RBCH, Dorset Blind Association and the League of Friends (each contributing 1/3), but negotiations under way to transition the role to a full ECLO position.
- St Mary's Hospital: ECLO employed 4 days per week. Funded by RNIB.
- Hampshire Hospitals: No ECLO in post. As of January 2018, 2 year funding available as charitable contribution from private source, and negotiations underway.
- Southampton General Hospital: No ECLO in post. Currently role performed by adult social services. RNIB funding for ECLO (1 year) in place and contract negotiations underway.
- Queen Alexandra Hospital: No ECLO in post, or plans for an ECLO. Currently role performed by adult social services.

7. Prevalence and treatment of eye disease

7.1 Cataract

A cataract is a clouding of the natural lens of the eye, which leads to progressive loss of visual acuity, contrast sensitivity and colour perception. The most common treatment is surgical intervention to remove the affected lens and replace it with a

substitute lens. The surgical treatment of cataract is one of the most cost-effective interventions in healthcare[99], and is performed in larger numbers than any other surgical procedure.

Beyond avoidance of modifiable risk factors, there is no proven method to prevent cataracts from occurring. Risk factors for age- related cataracts include hereditary factors, increasing age, smoking, diabetes and ultraviolet light exposure.

The National Eye Health Epidemiological Model estimates national prevalence of eye health conditions based on 2011 census data. The estimated prevalence of surgical cataract (that is, cataract affecting the vision sufficiently to warrant surgery) is 21,390 people in Hampshire / IOW (2% of over-50's), and 10,660 people in Dorset (3% of over-50's). The rate of cataract surgery is expected to increase by 25% over the next 10 years.[6]

7.2 Glaucoma

Glaucoma is a disease of the optic nerve, which carries information from the eye to the brain. Asymptomatic in its early stages, it is usually characterised by loss of peripheral vision, which may impact on patients' ability to drive and walk safely. It can lead to blindness.

Sight loss in glaucoma is not reversible, however the onset of glaucoma is gradual and the condition can be treated with medication, laser or filtration surgery.

Risk factors for glaucoma include increasing age, family history, ethnicity and ocular hypertension. Ocular hypertension (OHT) is an additionally important condition to measure as patients diagnosed with OHT are at increased risk of developing glaucoma and therefore require ongoing monitoring.

The NEHEM defines glaucoma as being present in someone who has an absolute field defect and either a cup:disc ratio of 0.7 or larger or substantial asymmetry of the cups (a difference in cup:disc ratio of 0.3 or larger) between the two eyes. Under this definition, it is estimated that there are 18,500 people living with glaucoma in Hampshire / IOW and 7,680 people living with glaucoma in Dorset.

7.3 Age-related macular degeneration

Patients with AMD lose their central vision so tasks that involve detail like reading and face recognition become difficult if not impossible. Peripheral vision is usually preserved. There are two types of AMD, commonly known as "dry" and "wet".

Whilst there is no effective treatment for dry AMD at present, the National Institute for Health and Care Excellence (NICE) has confirmed that in some cases of wet AMD, treatment by intravitreal injection with an anti-VEGF agent Ranibizumab (Lucentis) or Aflibercept (Eylea) can reduce loss of vision.[100,101]

The estimated number of people in with early dry AMD (symptomatic drusen) is 86,320 in Hampshire / IOW (7% of over-50's) and 40,800 in Dorset (12% of over-50's). The number of people with late stage dry AMD is 6,730 in Hampshire/ IOW and 3,350 in Dorset. The number of people with wet AMD is estimated at 13,790 in Hampshire / IOW and 6,900 in Dorset.

7.4 Diabetic eye disease

Diabetic eye disease is a group of conditions that can affect people with diabetes mellitus.

Diabetic retinopathy is caused by damage to blood vessels in eye, leading to complications including death of retinal tissue, bleeding into the eye, and retinal detachment. It is the most common cause of vision loss among people with diabetes and the leading cause of vision impairment and blindness among working-age adults.

Diabetic macular oedema is an accumulation of fluid in the central area of the retina, called the macula, caused by leaking blood vessels. This results in reduced quality of central vision, which is particularly important for reading and recognising faces.

Diabetic eye disease also includes cataract and glaucoma:

- Adults with diabetes are 2-5 times more likely than those without diabetes to develop cataract. Cataract also tends to develop at an earlier age in people with diabetes.
- In adults, diabetes nearly doubles the risk of glaucoma. Uncontrolled diabetic retinopathy may also lead to an aggressive form of glaucoma called rubeotic glaucoma.

Diabetic eye disease was until recently the leading cause of blindness in working age people; due to advances in the timely detection and management of the disease it has recently been overtaken by inherited retinal disorders[102]. These advances highlight the importance of an effective retinal screening service and timely referral and treatment of retinopathy.

In Wessex, it is estimated that there are 180,940 patients with diabetes[46] and this figure is estimated to rise to 210,430 by 2030. It is estimated that 54, 540 people in Wessex are living with diabetic retinopathy (38,980 in Hampshire / IOW and 15,560 in Dorset) and that 5,020 are living with severe diabetic retinopathy. These figures are projected to rise to 59,510 and 5,450 respectively by 2030.

The national Diabetic Eye Screening (DES) programme was established in 2003, and falls under the remit of NHS England, rather than CCGs. It is coordinated and led nationally, and is governed by strict quality assurance standards to ensure the service is safe and effective.

Locally, the DES services have recently been merged into one service for Hampshire / IOW, and another for Dorset. Both services are commissioned by NHS England

(Wessex), and delivered by a private sector company, Health Intelligence Ltd. Screening is performed by technicians, who carry out a basic sight test before administering pupil dilating drops and taking a retinal photograph. The photographs are graded by trained technicians, and the patients referred to hospital eye services as appropriate.

Outcome reporting for the new DES provider will be formally published at the end of December 2018 – there are therefore no data for the service at time of publication. The most recent uptake figures for the screening programme (before the change of provider) are outlined in Figure 26.

KPI DES 1: The proportion of those offered screening for diabetic retinopathy who attend a digital screening event (Uptake). Acceptable performance ≥ 70%, Achievable performance ≥80%

			2012/13	2013/14	2014/15	2015/16	2016/17				
	Acceptable	Achievable	Annual	Annual	Annual	Annual	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Annual
Southampton **Programme**	70%	80%	71.8%	73.9%	76.9%	**79.4%**	78.9%	78.7%	78.4%		
Portsmouth and SE Hants **Programme**			85.8%	87.3%	85.9%	**87.8%**	86.3%	87.0%	87.5%		
Salisbury and North Hants **Programme**			76.6%	72.8%	75.6%	**78.2%**	77.8%	77.6%	77.7%		
Dorset **Programme**			Software migration*	83.0%	81.2%	**81.2%**	81.8%	81.6%	80.5%		
Wessex Programmes					80.3%	**81.4%**	80.8%	80.9%	80.7%		
England					**82.9%**	**82.5%**	**82.5%**	**82.2%**			

Figure 26: Diabetic Eye Screening uptake 2012-17. Source: NHS England.

7.5 Uncorrected refractive error

Refractive error is a disorder of focusing light onto the retina. The main categories of refractive error are myopia (short-sightedness), hyperopia (long-sightedness; also called hypermetropia), presbyopia (loss of near vision with age) and astigmatism.

Refractive error can generally be fully corrected with a refractive prescription, given as glasses or contact lenses. Surgical options to correct refractive error include procedures to re-shape the cornea (often referred to under the blanket term ‘laser eye surgery’) and procedures which involve implanting a lens into the eye (e.g. cataract surgery).

Uncorrected refractive error has been identified as the most common cause of visual impairment and the second most common cause of blindness worldwide.[103] It may adversely affect performance at school or the workplace and is associated with impaired quality of life[103] and even higher mortality.[104]

Despite this profound impact on morbidity, mortality and productivity, refractive error is easily and cheaply treated.

There is little data available for local prevalence of uncorrected refractive error. No central records are kept for sight tests or the prescribing of glasses and contact lenses outside of the NHS. However, the prevalence of uncorrected refractive error is likely to be substantial.

A 2010 study of schoolchildren in the UK found that 28.8% of children aged 6-7 and 32.4% of children aged 12-13 had a significant refractive error (myopia ≤ -0.50DS or

hyperopia ≥ +2.00DS).[105] Despite this, only one in five children receives an NHS sight test each year in Wessex (see table in GOS section).

In UK adults aged 40-69, the prevalence of refractive error is in the region of 54%.[106] A 2010 study found a prevalence of uncorrected refractive error in the age range 48-89, of 1.9%.[107] A separate study of 44/45 year olds in the UK found a prevalence of 1.6% undiagnosed refractive error.

Taking the latter, more conservative estimate would imply a prevalence of undiagnosed refractive error of around 35000 adults in Wessex.

7.6 Amblyopia and children's vision screening

Amblyopia, often called a 'lazy eye', is a developmental disorder whereby the brain does not learn to correctly process the image received from one (or rarely, both) of the eyes. This results in permanently reduced vision in the affected eye which cannot be corrected with glasses.

Amblyopia develops from birth up to the age of around seven. The most common causes are uncorrected refractive error, strabismus (squint), and congenital cataracts.

Amblyopia can largely be prevented if it is detected at an early age, through the use of patching treatments. However, if it is not detected in early childhood, the condition is generally irreversible.

Amblyopia is very common, affecting 3.6% of children in the UK[108]. For this reason, the UK National Screening Committee recommends that all children should have their vision screened to detect reduced vision in one or both eyes.[109]

Children's vision screening falls under the remit of Local Authorities for funding and delivering the service, as part of the Healthy Child Programme. The UK National Screening Committee recommends that children's vision screening should take place between 4 and 5 years of age, and should be offered by an orthoptic-led service[109]. Orthoptists are specialists in eye movement and visual function.

It is noted that only children enrolled in state education, rather than those educated privately or at home, are included in the school vision screening service programme.

It is felt that there is inconsistency in the way the vision screening programme is commissioned across England, and a historic lack of clarity in commissioning responsibility and knowledge of national guidance.[110] The recommendation that screening should be "orthoptic-led" was first made in 2013, and there has been variation in how this recommendation is interpreted. Responsibility for children's vision screening services moved to local authorities in October 2015, so the current commissioning pathway is still relatively new and unfamiliar.

There is variation in the way school vision screening services are delivered across Dorset and Hampshire, and correspondence with orthoptic departments and Local

Authorities across the region confirmed the perception that the service is fragmented and inconsistent. It was very difficult to establish who, within the various Local Authorities contacted, was responsible for commissioning the service.

In Dorset, the children's vision screening programme is commissioned by Dorset CCG, which is unusual for the country as a whole. The service is delivered by the orthoptic department of Royal Bournemouth and Christchurch Hospitals, who run a training programme for vision screening technicians (not usually school nurses). This programme appears robust, with clear orthoptic ownership of both delivery and quality assurance.

Throughout Hampshire and the Isle of Wight, screening is performed by school nurses and their assistants, who receive training from their local orthoptic departments. The system is opt-in in the vast majority of areas, with parents required to sign a consent form. The service is audited by orthoptic departments in some catchment areas, and not in others. Training of school nurses is performed by orthoptic departments in all areas, but the nature and frequency of the training is variable.

In correspondence with local orthoptic departments, the nature of the confusion due to recent changes in commissioning was clear:

"We don't know how many children don't receive screening, some of them are screened at their opticians"

"I have no idea who funds and although I would love to audit and did start to collect data there is nothing I can send you."

"We audit as a department."

"I give a lecture on vision development and how to undertake the vision testing. However responsibility for the screening service currently rests with the school nursing managers. They invite me to lecture as required, and they keep the training records etc."

"I am asked to do training by the school Nursing Teams from time to time but the service is not led by the Orthoptic department due to lack of staff."

"The school nurses ask us to give a training session every few years"

"Although I have no evidence I feel the screening by the school nurses works well and if a child fails to attend the hospital this is fed back to the school nursing team."

8. Incidence and prevalence of partial sight and blindness

The incidence and prevalence of partial sight ('sight impairment') and blindness ('severe sight impairment') can be estimated through a variety of methods. The most common method is through Certifications of Visual Impairment (CVI's), data for which are published annually by Public Health England.

A Certification of Vision Impairment (CVI) formally certifies a person as either sight impaired or severely sight impaired. Each CVI form is completed by a consultant ophthalmologist in an eye clinic, with a copy being sent to the local social services department which provides a formal route to social care services. Although it is the formal route to social care services, it should be noted that people who are visually impaired often need support well before the time of registration, and that rates of vision loss inferred from CVI registration data are likely to be underestimates of true disease burden.

- There were 14,060 people in Wessex in 2016 (the last year for which there are data) who had been registered sight impaired or severely sight impaired[111]. 23% of these were aged under 65.
- Within Dorset, there were 4,715 people registered sight impaired or severely sight impaired, of which 950 were under 65.
- Within Hampshire/IOW, there were 9,345 people registered sight impaired or severely sight impaired, of which 2,280 were under 65.

The rates of CVI within Wessex are 25% higher than the English average, and in Dorset the rates are 33% higher.

Region	Rate of new CVI's per 100,000 population in 2015/16
England	41.9
Wessex	50.6
Dorset (Including UAs)	55.9
Hampshire / IOW (Including UAs)	48.5

Figure 27: Rate of new CVIs per 100,000 people. Source: PHE[111]

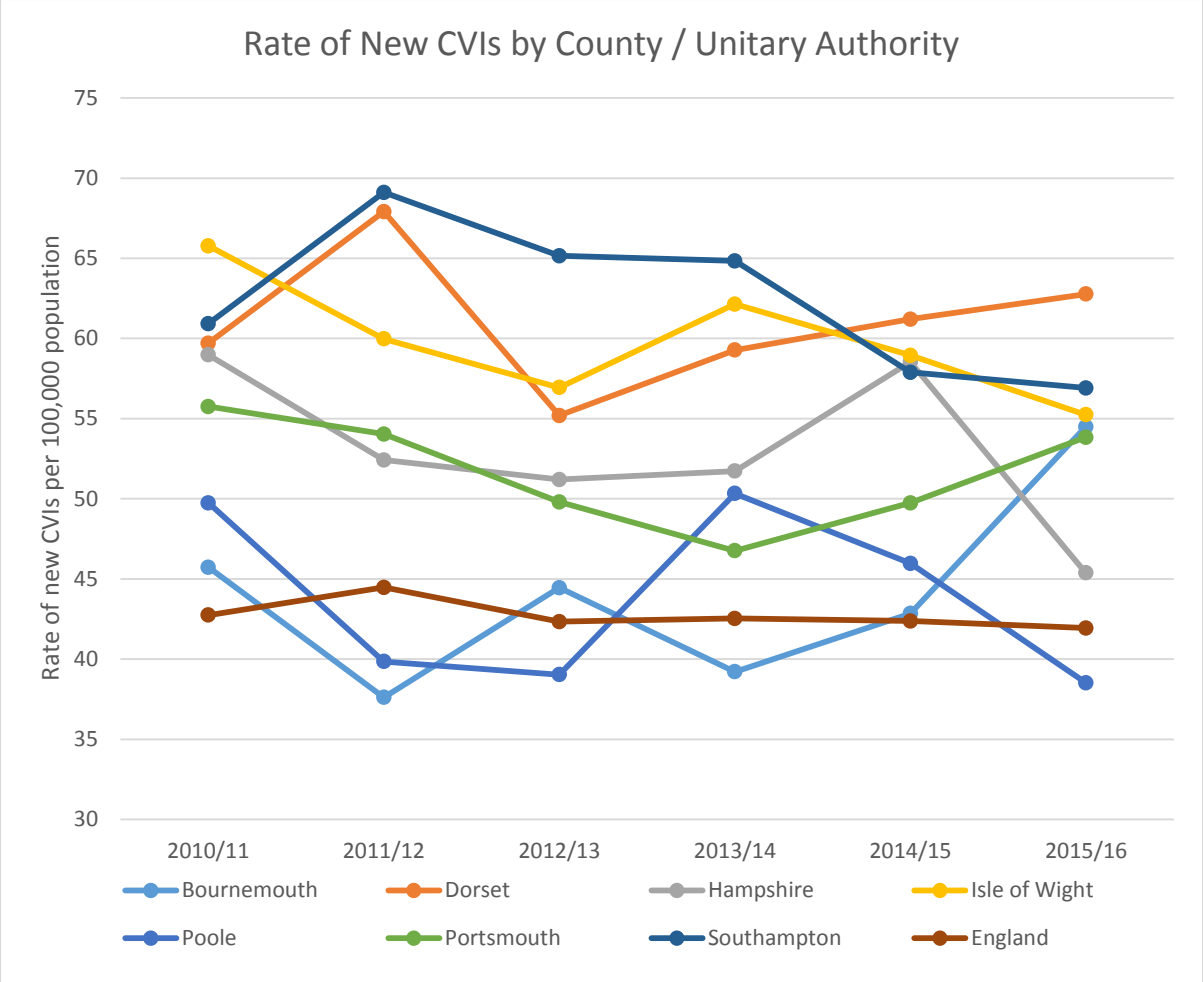

Figure 28: Rate of new CVIs per 100,000 people. Source: PHE[111]

9. Habitation, reablement and support

The focus of this needs assessment is on preventing sight loss and as such services for habitation, reablement, and support for people with sight loss fall outside the scope of this document. As many conditions resulting in visual impairment cannot be prevented, cured or alleviated entirely, Low Vision Aid (LVA) clinics and reablement services such as mobility training are vital. Expenditure on LVA clinics and reablement will save both the NHS and Adult Services in the long-term and will help address some of the health inequalities associated with sight loss. There is a need for further work to map the current services available locally, assess the local need for such services and to assess the degree to which this need is met.

9.1 Third sector organisations

There are a number of voluntary and non-profit organisations with a focus on sight loss within Wessex. Together, they represent a significant resource which should be considered when commissioning new services (for example low vision aid equipment).

9.1.1 Bournemouth Blind Society, Bournemouth

http://www.bournemouthblindsociety.uk

Services offered include:

- Support services – emotional support, community support, befriending, guiding, sight awareness training, kitchen training
- Audio library
- Transcription service
- Group social events
- Subsidised transport service

9.1.2 Dorset Blind Association, Ferndown

http://dorsetblind.org.uk

Services provided include:

- Community Support Workers
- Volunteers – home visits to help with activities from reading post or checking the fridge.
- Bournemouth Hospital Eye Unit – sight loss advisor part funded by the DBA
- Equipment
- Transcribing to audio and Braille
- Audiobook library
- Support for working age people
- British Wireless for the Blind fund agents
- Support for families and carers
- Activities and sports

9.1.3 Guide Dogs, Southampton
https://www.guidedogs.org.uk

Services provided include:

- Guide dog services for around 230 users across Wessex, Wiltshire and the Channel Islands
- Orientation and mobility training
- My Guide – sighted guiding service
- Training for organisations

9.1.4 Helping Hands for the Blind, Basingstoke
www.helpinghandsfortheblind.org.uk

Helping hands for the blind is a local charity supporting children and adults who are blind or partially sighted throughout Basingstoke and the adjacent Hampshire Boroughs. Helping hands for the blind advises on and provides services and equipment that enable visually impaired people to live independent lives. Modern technology and a greater awareness have encouraged a generation of visually impaired people to seek out new and innovative ways to overcome the restrictions of sight loss and Helping hands for the blind has moved to respond to these exciting challenges.

9.1.5 Isle of Wight Blind Society, Newport
http://www.iwsb.org.uk

Services provided include:

- Clubs and activities
- Talking newspaper
- Audio library
- Home visits

9.1.6 Macular Society, Andover
https://www.macularsociety.org/support-services

In addition to funding research into macular disease, the Macular Society provides support services including:

- Patient information
- Local support groups –
- Buddies
- Counselling
- Telephone befriending
- Daily living skills
- Technology advice
- Advocacy

9.1.7 Open Sight, Eastleigh

www.opensight.org.uk

Services provided include:

- Independent Living – advice and guidance (home visit & telephone)
- Daily Living Aids – assistive equipment, practical advice, independence
- Benefits & Entitlements – advice & guidance & practical support for applications
- Low Vision Assessments – correct magnification and lighting solutions (home visit)
- Resource Centre – extensive range of equipment & resources to demo
- Family Support – emotional support, advice and social activities for the family
- Reablement Service – overcoming day-to-day problems around living and mobility
- Social & Leisure – active social life, hobbies and interests
- Clubs & Groups – network of 20 peer support groups across Hampshire
- Second Sight Magazine – news and information 3 times per year
- Volunteering – opportunities to volunteer for Open Sight
- Prevention – Eye Health knowledge, advice and talks to groups and people of all ages
- Sight Awareness Training – for professionals, organisations, carers and volunteers
- Disability Student Allowance – support to students at College or University

9.1.8 Southampton Sight, Southampton

http://southamptonsight.org.uk

Services provided include:

- Equipment and resource centre - a range of specialised and adapted equipment to help visually impaired people with daily living both in and away from home.
- Information, Advice & Guidance
- Social activities
- Home technologies
- Community outreach - the team can come out to visit individuals within their own homes or to groups in the community to advice and provide personalised demonstrations of everyday living equipment and technologies to promote and maintain independence.
- Health & wellbeing – including Tai Chi and cooking classes
- Young people & Families
- Sight loss Awareness Training – for groups, businesses and schools

9.1.9 Portsmouth Association for the Blind
http://www.portsmouthblind.com/

Services provided include:

- Home visiting service
- Mini bus service - Providing an escorted door to door mini bus service to social groups and outings.
- Social groups
- Group outings

10. Conclusions

[NB: Numbering not in order of priority or importance.]

Conclusion 1
Problems of vision rise exponentially with age. The population of Wessex is projected to increase between 2017 and 2035, with disproportionate increases in the over-65s age group, while the working age population is projected to remain stable.

➔ **Recommendation 1**
A greater capacity will be needed within the Wessex eye health service to provide for the projected increase in problems of vision. A relatively smaller projected working age population implies that solutions which increase capacity by making more efficient use of the existing workforce would be preferable. Such solutions may include greater use of existing optometry services for minor eye conditions and other contracted pathways, and greater use of virtual clinics.

Conclusion 2
The population of Wessex is distributed widely over rural areas across the region. The urban centres have a higher proportion of younger age groups, while the rural areas have higher proportions of the older age groups.

➔ **Recommendation 2**
It should be recognised that centralised eye health services may be inaccessible to much of the Wessex population, particularly those with limited vision who may find travel challenging. Decentralised (community) eye health services are more appropriate for this region.

Conclusion 3
Problems of vision can coexist with other health and social care needs in seldom-heard groups such as those with dementia, people with learning difficulties, care home residents and the homeless. These groups need particular attention.

➔ **Recommendation 3**
Seldom heard groups need particular recognition and advocacy to reduce health inequalities.

We recommend Commissioners should work with all stakeholders to identify specific needs ensuring appropriate service provision.

Once specific local needs have been identified, Wessex Local Eye Health Network is well-placed to set up task and finish working groups with appropriate skill sets to take this forward through action plans with focused & achievable outcomes.

Conclusion 4
Problems of vision can be caused by comorbidities such as diabetes mellitus and hypertension. There is a projected increase in prevalence of diabetes mellitus and hypertension over the coming decades, which is independent of projected population ageing, and this will have implications for the prevalence of related problems of vision.

➔ **Recommendation 4**
The expected increase in problems of vision as a result of other conditions such as diabetes mellitus and hypertension is a public health issue which warrants investment by the eye health service in both preventative campaigns and robust screening services. This will be most effectively performed in collaboration with other organisations.

Conclusion 5
Nationally, eye health accounts for the second-highest outpatient attendance.

➔ **Recommendation 5**
The high volume of patient episodes accounted for by problems of vision, both in primary care and in hospital eye services, should be recognised as a significant proportion of the total local health service activity and needs to be addressed by commissioners. Skill sets within the community and hospital eye services including those optometrists & other health care professionals with higher qualifications and greater clinical experience should be identified to ensure optimum use of those skills where appropriate. Training can then be targeted to enable better use of a more widely available workforce especially out in the community.

Conclusion 6
There has been a marked increase in outpatient activity in the tertiary centre in Southampton from 2013 to 2017, and also significant increases in the two largest secondary providers in the region, in Bournemouth and Portsmouth. Inpatient activity for ophthalmology has however remained stable in all hospitals in the region. Trust reported data for emergency activity shows an 8% rise from 2014-15 to 2016-17 but it is not known if this was offset by a decline in activity in other settings. This

suggests a greater number of referrals to tertiary care, without a rise in interventions or inpatient activity and possibly changing patterns of patient behaviour in seeking urgent and emergency care.

➔ **Recommendation 6**
Increased outpatient capacity is needed across the region, but solutions should be found to reduce the burden on the local secondary and tertiary services. More effective use of community services and virtual clinics may form part of the solution.

Conclusion 7
Problems of vision account for a substantial cost to the NHS, social care services, and society nationally. This is likely to be similar in Wessex.

➔ **Recommendation 7**
It should be recognised that the local cost of vision loss is likely to exceed the expenditure on problems of vision by an order of magnitude. Increased investment in preventing vision loss and reenabling those with vision loss is therefore likely to generate significant wider savings.

Conclusion 8
There is likely to be considerable variation in expenditure on problems of vision across Wessex.

➔ **Recommendation 8**
The apparent inequality in spending on problems of vision (1.8% per person in Portsmouth vs 3.6% per person in North East Hampshire) should be investigated further, with a view to reducing unwarranted geographic variation in health care quality within the region.

Conclusion 9
Eye health services are delivered in a wide range of settings, from ophthalmic services in the high street and vision screening in primary schools to secondary and tertiary care. Responsibility for funding and oversight is shared between a large number of organisations. This results in a situation where there is no oversight of the pathway as a whole. The result is reduced opportunity for collaboration, addressing the patient experience across the pathway, and developing new models of service delivery.

➔ **Recommendation 9**
There should be one single network with representation from all local stakeholders, which is tasked with coordinating an integrated eye health service. The Local Eye Health Network, hosted by NHS England, is in an ideal position to provide this co-ordination. Commissioners, the voluntary sector, and provider representatives should engage with and make use of this forum to exploit the opportunities.

Due to the complex multi-agency nature of eye health provision, service planning should be carried out at an STP/ICS level with a long-term view. This planning should follow the recommendations of the Systems and Assurance Framework for Eye Health (SAFE) developed by the Clinical Council for Eye Health Commissioning.

Conclusion 10
There is no common data collection platform, and data relating to eye health care in Wessex are currently inconsistent and incomplete.

➔ **Recommendation 10**
Adoption of a linked IT platform for eye health provision across Wessex would greatly improve the ability to collect and share data, and design more effective pathways. A particular area of need is the interface between optometry and hospital eye services, which should be addressed soon to enable effective collaboration on care pathways such as glaucoma, cataract and MECS pathways.

The Vision UK Ophthalmic Public Health Committee's Portfolio of Indicators has been endorsed by the Clinical Council for Eye Health Commissioning and would be an appropriate tool to measure local eye health outcomes.

11. References

1. The College of Optometrists. *Britain's eye health in focus: A snapshot of consumer attitudes and behaviour towards eye health.* (2013).
2. Cumberland, P. M. & Rahi, J. S. Visual Function, Social Position, and Health and Life Chances. *JAMA Ophthalmol.* (2016). doi:10.1001/jamaophthalmol.2016.1778
3. Wittenborn, J. & Rein, D. *Cost of Vision Problems: The Economic Burden of Vision Loss and Eye Disorders in the United States*. (2013).
4. Health and Social Care Information Centre. *Hospital Episode Statistics (HES): Admitted patient care - procedures and interventions 2016-17*. (2017).
5. Burr, J. M. *et al.* The clinical effectiveness and cost-effectiveness of screening for open angle glaucoma: a systematic review and economic evaluation. *Health Technol. Assess.* **11,** iii–iv, ix–x, 1-190 (2007).
6. The Royal College of Ophthalmologists. The Way Forward. (2107).
7. Parkins, D. Capacity issues within ophthalmology are real and current. (2016). Available at: https://www.college-optometrists.org/the-college/blogs/capacity-issues-within-ophthalmology-.html.
8. Pezzullo, L., Streatfield, J., Simkiss, P., and Shickle, D. The economic impact of sight loss and blindness in the UK adult population. *RNIB Deloitte Access Econ. Manuscr. Submitt. Publ.* (2016).
9. NHS England. 2013-14 CCG Programme Budgeting Benchmarking Tool. (2015).
10. Huszarik, N. & Lacy, P. *Community-based Vision Rehabilitation Services in Wessex*. (2018).
11. NHS Digital. Hospital Episode Statistics: Outpatient Activity. (2017). Available at: https://digital.nhs.uk/search?q=hospital+outpatient+activity+2016-17&s=s.
12. Healthwatch Hampshire. *Out of Focus*.
13. WHO. Global Action Plan 2014-2019. (2013). Available at: http://www.who.int/entity/blindness/AP2014_19_English.pdf?ua=1.
14. Vision2020. UK Vision Strategy 2013-2018. 1–36 (2013).
15. NHS Digital. Quality and Outcomes Framework (QOF) 2016-17. (2017). Available at: http://digital.nhs.uk/catalogue/PUB30124.
16. Department of Health and Social Care. Public Health Outcomes Framework 2016-2019. (2016).
17. VISION 2020 UK Ophthalmic Public Health Committee. Portfolio of Indicators for Eye Health and Care. (2015).
18. NHS England, Care Quality Commission, Monitor & Public Health England. Five Year Forward View. (2014).
19. NHS England. Next steps on the NHS Five Year Forward View. (2017).
20. Barber, S. & Sutherland, N. Preventing Avoidable Sight Loss: House of Commons Debate Pack. *House Commons Libr.* (2017).
21. NHS England. CCG improvement and assessment framework 2017/18. (2017).
22. Clinical Council for Eye Health Commissioning. *Community Ophthalmology Framework*. (2015).
23. Clinical Council for Eye Health Commissioning. Primary Eye Care Framework for First Contact Care. 1–18 (2016).
24. Clinical Council for Eye Health Commissioning. *Low Vision , Habilitation and Rehabilitation Framework for Adults and Children*. (2017).

25. The NHS Shared Planning Team. Sustainability and Transformation Plan. (2016).
26. Our Dorset. Our Dorset Sustainability and Transformation Plan Our Dorset Sustainability and Transformation Plan for local health and care. 1–44 (2016).
27. HIOW Care System STP. Hampshire and Isle of Wight Health & Care System STP Delivery Plan Final Draft. (2016).
28. Personal Communication to Author, 1/1/2018.
29. Institute of Public Care. Projecting Adult Needs and Service Information (PANSI). (2018).
30. Office for National Statistics. Population Estimates for UK, England and Wales, Scotland and Northern Ireland, Mid-2016. (2017). Available at: https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/datasets/populationestimatesforukenglandandwalesscotlandandnorthernireland.
31. Racette, L., Wilson, M. R., Zangwill, L. M., Weinreb, R. N. & Sample, P. A. Primary Open-Angle Glaucoma in Blacks: A Review. *Surv. Ophthalmol.* **48,** 295–313 (2003).
32. Rudnicka, A. R., Mt-Isa, S., Owen, C. G., Cook, D. G. & Ashby, D. Variations in Primary Open-Angle Glaucoma Prevalence by Age, Gender, and Race: A Bayesian Meta-Analysis. *Investig. Opthalmology Vis. Sci.* **47,** 4254 (2006).
33. Wormald, R. P. L., Basauri, E., Wright, L. A. & Evans, J. R. The African Caribbean eye survey: Risk factors for glaucoma in a sample of African Caribbean people living in London. *Eye* **8,** 315–320 (1994).
34. Holman, N., Forouhi, N. G., Goyder, E. & Wild, S. H. The Association of Public Health Observatories (APHO) Diabetes Prevalence Model: Estimates of total diabetes prevalence for England, 2010-2030. *Diabet. Med.* **28,** 575–582 (2011).
35. Raymond, N. T. *et al.* Higher prevalence of retinopathy in diabetic patients of south asian ethnicity compared with white Europeans in the community. *Diabetes Care* **32,** 410–415 (2009).
36. Congdon, N., Wang, F. & Tielsch, J. M. Issues in the epidemiology and population-based screening of primary angle-closure glaucoma. *Surv. Ophthalmol.* **36,** 411–23
37. Dickey, H., Ikenwilo, D., Norwood, P., Watson, V. & Zangelidis, A. Utilisation of eye-care services: The effect of Scotland's free eye examination policy. *Health Policy (New. York).* **108,** 286–293 (2012).
38. Gulliford, M. C. *et al.* Socio-economic and ethnic inequalities in diabetes retinal screening. *Diabet. Med.* **27,** 282–288 (2010).
39. Rahi, J. S., Peckham, C. S. & Cumberland, P. M. Visual impairment due to undiagnosed refractive error in working age adults in Britain. *Br. J. Ophthalmol.* **92,** 1190–1194 (2008).
40. Fraser, S., Bunce, C. & Wormald, R. Risk factors for late presentation in chronic glaucoma. *Investig. Ophthalmol. Vis. Sci.* **40,** 2251–2257 (1999).
41. RNIB. Sight loss UK 2013. The latest evidence. 1–36 (2013).
42. Fraser, S. Deprivation and late presentation of glaucoma: case-control study. *BMJ* **322,** 639–643 (2001).
43. Kliner, M. *et al.* Diabetic retinopathy equity profile in a multi-ethnic, deprived population in Northern England. *Eye* **26,** 671–677 (2012).
44. Moreton, R. B. R., Stratton, I. M., Chave, S. J., Lipinski, H. & Scanlon, P. H. Research: Care Delivery Factors determining uptake of diabetic retinopathy

screening in Oxfordshire. *Diabet. Med* **34,** 993–999 (2017).
45. Leese, G. P., Boyle, P., Feng, Z., Emslie-Smith, A. & Ellis, J. D. Screening uptake in a well-established diabetic retinopathy screening program: the role of geographical access and deprivation. *Diabetes Care* **31,** 2131–5 (2008).
46. RNIB. *Sight Loss Data Tool Version 3.5*. (2017).
47. Day, F. *et al.* A glaucoma equity profile: correlating disease distribution with service provision and uptake in a population in Northern England, UK. *Eye* **24,** 1478–1485 (2010).
48. Shickle, D., Davey, C. J. & Slade, S. V. Why is the General Ophthalmic Services (GOS) Contract that underpins primary eye care in the U.K. contrary to the public health interest? *Br. J. Ophthalmol.* **99,** 888–92 (2015).
49. Strategy, U. K. V. England Vision Strategy priorities. 1–2 (2018).
50. The Surrey and Sussex Local Eye Health Network. *Hard to Reach? and what to do about it. A report by the Hard to Reach subgroup*. (2016).
51. The Royal College of Ophthalmologists. Ophthalmic Services Guidance: Quality standard for people with sight loss and dementia in an ophthalmology department. (2015).
52. Emerson, E. & Robertson, J. The Estimated Prevalence of Visual Impairment among People with Learning Disabilities in the UK. *RNIB and SeeAbility* 35 (2011). doi:IHAL 2010-05
53. McCulloch, D. L., Sludden, P. A., McKeown, K. & Kerr, A. Vision care requirements among intellectually disabled adults: a residence-based pilot study. *J. Intellect. Disabil. Res.* **40 (Pt 2),** 140–50 (1996).
54. SeeAbility. Children in Focus Campaign. (2017).
55. LOCSU Community Services. Community Eye Care for Adults & Young People with Learning Disabilities Pathway. (2012).
56. Taylor, H. R. . b, Pezzullo, M. L. . & Keeffe, J. E. . b. The economic impact and cost of visual impairment in Australia. *Br. J. Ophthalmol.* **90,** 272–275 (2006).
57. Sawers, N. The state of ocular health among London's homeless population. *Eye* **31,** 632–635 (2017).
58. Department for Communities and Local Government. *Rough Sleeping Statistics England Autumn 2016*. (2017).
59. Department for Communities and Local Government. Live tables on homelessness. (2017).
60. Evans, J. R., Fletcher, A. E. & Wormald, R. P. L. Depression and Anxiety in Visually Impaired Older People. *Ophthalmology* **114,** 283–288 (2007).
61. Age UK. Later Life in the United Kingdom. (2017).
62. RNIB. Sight Loss: A public health priority. 1–20 (2014). Available at: http://www.rnib.org.uk/sites/default/files/Sight_loss_a public_health_priority.pdf.
63. *Personal Correspondence from Dr Mohit Sharma, Public Health England*. (2017).
64. Mathur, R. *et al.* Population trends in the 10-year incidence and prevalence of diabetic retinopathy in the UK: A cohort study in the Clinical Practice Research Datalink 2004-2014. *BMJ Open* **7,** 1–12 (2017).
65. Boyce, T. Falls—costs, numbers and links with visual impairment. (2011).
66. Public Health England. Hypertension Prevalence Estimates. (2016). Available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/610893/Hypertension_prevalence_estimates.xlsx.

67. NHS Digital. Quality and Outcomes Framework (QOF) - 2015-2016.
68. Smith, W. *et al.* Risk factors for age-related macular degeneration: Pooled findings from three continents. *Ophthalmology* **108,** 697–704 (2001).
69. Kelly, S. P., Thornton, J., Lyratzopoulos, G., Edwards, R. & Mitchell, P. Smoking and blindness. *BMJ* **328,** (2004).
70. Solberg, Y., Rosner, M. & Belkin, M. The association between cigarette smoking and ocular diseases. *Surv. Ophthalmol.* **42,** 535–47
71. Bidwell, G. *et al.* Perceptions of blindness related to smoking: a hospital-based cross-sectional study. doi:10.1038/sj.eye.6701955
72. Moradi, P. *et al.* Teenagers' perceptions of blindness related to smoking: a novel message to a vulnerable group. *Br J Ophthalmol* **91,** 605–607 (2007).
73. Macintosh, C. Stroke re-visited: visual problems following stroke and their effect on rehabilitation. *Br. Ir. Orthopt. J.* 10–14 (2003).
74. Rowe, F. J. Who sees visual impairment following stroke. *Strabismus* **18,** 37–40 (2010).
75. Institute of Public Care. Projecting Older People Population Information System (POPPI). (2018).
76. National Institute for Health and Care Excellence. Glaucoma in Adults (Quality Standard QS7). (2011).
77. NHS England & Bexley Clinical Commissioning Group. Proven Case Study: Avoiding unnecessary referral for glaucoma : use of a repeat measurement scheme. (2014).
78. Hornby, S. The Royal College of Ophthalmologists Ophthalmic Services Guidance Primary Care Ophthalmology Care. (2013).
79. Featherstone, P. I., James, C., Hall, M. S. & Williams, A. General practitioners' confidence in diagnosing and managing eye conditions: A survey in south Devon. *Br. J. Gen. Pract.* **42,** 21–24 (1992).
80. McDonnell, P. How do general practitioners manage eye disease in the community? *Br J Ophthalmol* **72,** 733–736 (1988).
81. Sheldrick, J. H., Wilson, A. D., Vernon, S. A. & Sheldrick, C. M. Management of ophthalmic disease in general practice. *Br. J. Gen. Pract.* **43,** 459–462 (1993).
82. Sheldrick, J. H., Vernon, S. A., Wilson, A. & Read, S. J. Demand incidence and episode rates of ophthalmic disease in a defined urban population. *BMJ* **305,** 933–6 (1992).
83. Tinger, A, (Foresight Project), Alderman, H., Rodwell, S. & Garrett, A. Foresight Project Report. *Opt. Confereration Coll. Optom.* (2016).
84. Department of Health & Association of Optometrists and Federation of Ophthalmic and Dispensing Optiscians. *Memorandum of Understanding: Frequency of GOS Sight Tests*. (2003).
85. Health and Social Care Information Centre. General Ophthalmic Services activity statistics - England, Apr 2015 - Mar 2016. (2016). Available at: http://www.hscic.gov.uk/pubs/gosactivity1516.
86. NHS Digital. *General Ophthalmic Services, Workforce Statistics, England and Wales - 31 December 2016*. (2017).
87. GOC. General Optical Council Register. Available at: https://www.optical.org/en/utilities/online-registers.cfm. (Accessed: 4th March 2018)
88. NHS Digital. *General Practice Provisional Tables June 2017*. (2017).
89. The Royal College of General Practitioners. *RCGP clinical priority on eye*

health - survey report. (2014).
90. NHS Digital. *HCHS staff in NHS Trusts and CCGs Jun 17*. (2017).
91. Health and Social Care Information Centre. *Hospital Episode Statistics (HES): Outpatient Activity - Provider-level analysis*. (2017).
92. Optegra Eye Health Care. *Vision of Britain 2016*. (2016).
93. Department of Health, The Optical Confederation & BMA. *General Ophthalmic Mandatory Services Model Contract*. (2013).
94. Local Optical Committe Support Unit. *Glaucoma Repeat Readings & OHT Monitoring Community Service Pathway V.3*. (2016).
95. Local Optical Committee Support Unit. Minor Eye Conditions Service (MECS) Pathway V.3. (2016).
96. Meredith, P., Pratsides, L. & Davison, C. *Primary Eyecare Acute Referral Service (PEARS): Is It The Future?* (2014).
97. Rees, G. *et al.* Vision-specific distress and depressive symptoms in people with vision impairment. *Investig. Ophthalmol. Vis. Sci.* **51,** 2891–2896 (2010).
98. Subramanian, A., Conway, M. & Gillespie-Gallery, H. *The role of eye clinic liaison officers*. (2011).
99. Riaz, Y. *et al.* in *Cochrane Database of Systematic Reviews* (ed. Riaz, Y.) (John Wiley & Sons, Ltd, 2006). doi:10.1002/14651858.CD001323.pub2
100. National Institute for Health and Care Excellence. *Ranibizumab and pegaptanib for the treatment of age-related macular degeneration: Technology appraisal guidance [TA155]*. (2008).
101. National Institute for Health and Care Excellence. Aflibercept solution for injection for treating wet age‐related macular degeneration: Technology appraisal guidance [TA294]. (2013).
102. Liew, G., Michaelides, M. & Bunce, C. A comparison of the causes of blindness certifications in England and Wales in working age adults (16-64 years), 1999-2000 with 2009-2010. *BMJ Open* **4,** e004015 (2014).
103. Resnikoff, S., Pascolini, D., Mariotti, S. P. & Pokharel, G. P. Global magnitude of visual impairment caused by uncorrected refractive errors in 2004. *Bull. World Health Organ.* **86,** 63–70 (2008).
104. Karpa, M. J. *et al.* Direct and indirect effects of visual impairment on mortality risk in older persons. *Arch. Ophthalmol.* **127,** 1347–1353 (2009).
105. O'Donoghue, L. *et al.* Refractive error and visual impairment in school children in Northern Ireland. *Br. J. Ophthalmol.* **94,** 1155–1159 (2010).
106. Cumberland, P. M. *et al.* Frequency and distribution of refractive error in adult life: Methodology and findings of the UK biobank study. *PLoS One* **10,** 1–14 (2015).
107. Sherwin, J. C. *et al.* Uncorrected refractive error in older British adults: the EPIC-Norfolk Eye Study. *Br. J. Ophthalmol.* **96,** 991–996 (2012).
108. Williams, C. *et al.* Prevalence and risk factors for common vision problems in children: data from the ALSPAC study. *Br. J. Ophthalmol.* **92,** 959–964 (2008).
109. Public Health England. Child Vision Screening: Service Specification. (2018).
110. British and Irish Orthoptic Society Vision Screening Special Interest Group Steering Committee. Children's Vision Screening. Available at: http://www.rnib.org.uk/services-we-offer-advice-professionals-health-professionals/gps/children-vision-screening.
111. Public Health England. National Public Health Profiles. (2017).

12. Appendix

12.1 Patient engagement flyer

EYE SERVICES: A CALL FOR FEEDBACK

Wessex Local Eye Health Network is carrying out an eye health needs assessment for Hampshire, Dorset and the Isle of Wight. Our aim is to create a document which describes what eye health services are currently provided across the region, and to assess how well those services meet the needs of the local populations. Services will include those provided by hospitals, optometrists, GP's, local authorities, school nurses and charities.

We're particularly interested in how local patients and users of eye health services have found the experience. Are there any particular services which work really well? Are there any which they feel need to be improved? Do pathways work smoothly, or are there gaps in the system?

Would you or someone you know be willing to tell your story? We would like your experiences to bring to life what can otherwise be a rather dry collection of data and statistics. Our hope is that by illustrating the real-world implications of an effective or ineffective service, we can persuade commissioners, local authorities and practitioners to make any changes recommended by the report -- or at least to take the time to examine the issue themselves.

If you would like to take part, please contact Rory at:
rory.nicholson@nhs.net
or
0113 8253276

Deadline: November 2017

12.2 Service user feedback

General comments and patient stories

- My optician identified an eye problem needing further investigation namely partial macular hole. He wrote to my GP [date]. My GP referred the letter to

QA Opthamology Dept. [8 days later]. An appointment was made [8 weeks later]. My appointment time was 14.20, I was seen at 17.20. The Consultant Opthalmologist wrote to my GP [1 week after the appointment] advising no action required and for a further check in a few months. I am still awaiting a further check. I have not chased the matter in the light of the Consultant's positive comments but will be visiting my optician next January to review the situation.

Two things to draw to your attention:

The gap between appointment time and actually being seen.

The lack of a follow up routine appointment

- My left eye was operated on by [consultant] on the [date]. The recovery has been complicated but not compromised by a leakage of tamponade gas into the front chamber. Obviously I've been seeing far more of the eye clinic at QA and cannot fault the quality of care I have been receiving from medical professionals across the board.
  Strikes me that you find the very best of humanity in care services. Obviously this view has been compromised of late by too many geriatric and sex abuse events. However I always blame the workman and never the tool. Quality leadership generates a quality business and in my experience the QA has quality leadership. Shame it is not being replicated country-wide.

- Between Easter and August this year I had two cataract operations at QA. Before, during and after the procedures I found the medical staff helpful, informative and compassionate. The written and verbal information I received was helpful, and I was encouraged to ask any questions I might have.
  The only area I had problems with were "mixed messages". This was especially apparent when I phoned and spoke to clerks between the two operations. I was given different information from different people, and what felt like a "standard answer" for those waiting for uncomplicated operations. As the imbalance between my eyes after the first surgery caused me significant problems it wasn't until I'd phoned several times that someone read my records and I felt that my concern was actually addressed.
  I am very pleased with the end result.

- My optician identified a problem he thought was early glaucoma and had to then write to my GP to request he make a hospital referral. About 2 weeks later my GP phoned to ask if I still wanted to be referred. I still can't understand why the referral could not have gone directly from the optician who could have informed the GP he had done this. The need for the "middle man" who knew absolutely nothing about my eyes seemed totally unnecessary red tape.
  The appointment I was given was at QA hospital Portsmouth and by chance, when making the follow up appointment, I mentioned it was a pity there were no clinics in my local hospital in Gosport. It turned out there were clinics there and on checking, the receptionist found I had fortunately been allocated the "right" consultant to attend these clinics in future. How much better it would have been to automatically be offered a local clinic for routine check-ups. I

now attend regularly in Gosport but it all happened purely by one chance remark.
Beyond that I cannot fault the treatment I have been given and I feel the team do a splendid job.

- I think we can all agree that this is NOT an exact science by any means. I am a diabetic Type 2 so have an eye test every year. So I was extremely worried when in September 2013 I was ordered to the eye department at the Queen Alexandra Hospital for 9.a.m. which necessitated a taxi from here because I would not be able to drive.
  When I got to see the Consultant he explained there was no need for this, as the abnormality at the back of my eye was caused by my short-sightedness and had nothing to do with diabetes. So the journey was a complete waste of my time and money (for the taxi) which the NHS refused to pay for.
  It really was all very frightening. If the people involved do not know what they are doing they must say so, and not waste a consultant's time again.

- Several years ago I had ductal plugs fitted in my lower tear ducts due to dry eye which gave me a lot of relief from the soreness this had caused. The duct in the left eye has come out a couple of times since and I was able to get a speedy appointment at University Hospitals Southampton to have it replaced. This summer I was suffering from a very sore, dry, gritty left eye and after visiting my optician, he confirmed that the plug had come out of the left eye tear duct. I asked my optician if he could send a referral to the eye unit at Southampton so I didn't have to wait for an appointment with my GP to do the same thing. This my optician did and after a few weeks I received a Choose and Book letter inviting me to ring them to arrange an appointment. This I did, but when I got through to the number on the letter they said they had no appointments available at any of the local hospitals e.g. Hythe, Lymington or Southampton UHS and told me to ring my GP.
  I range my GP and got through to the secretary. She said that this is always happening because the Choose and Book system is breaching its 18-week wait. She said she could see my name in the system but that I would just have to wait till an appointment came through and to ignore any more computerised letters that arrive from the Choose and Book system. I did receive a further letter from them with exactly the same wording as the first. I ignored it. A few weeks later I got an appointment letter for [date] at Hythe Hospital. I was not prepared to suffer in discomfort and pain in my eye for that long as I have a long drive to and from work and use the computer most of the day.

- I rang the number at Hythe Hospital and the receptionist said that I might be able to get an urgent appointment at Lymington Hospital and that she would ring them on my behalf. She very kindly did this and told me that unfortunately the Consultant would have helped me out but he didn't have the equipment needed at the hospital at the moment. She suggested I go to the eye casualty walk-in clinic at Southampton UHS. I replied that I thought this had now become a book in advance service. She spoke to the Consultant at Lymington just to check and he said that I could just walk in but that it would probably be better to ring in advance to get an appointment time and for them to have my notes ready. This I did and got an appointment for 2.00pm the same day.

Although they didn't have my notes ready when I arrived at reception, I was seen very quickly for assessment by the nurse and then waited an hour and a half before I was called in to the Ophthalmology Consultant – I did not mind waiting and they were very busy. I was asked if I use eye drops which I do and have on repeat prescription with my GP. The process in total took about 10 minutes and I came out feeling relieved and very pleased that the soreness and gritty feeling in my eye had disappeared – such a relief! I asked if I can attend eye casualty again if I lose either of the plugs and they confirmed that I could.
If I had waited until February I would have been in a lot of discomfort and when it relates to eyes I think it is important to be seen quickly.

- When I approached the reception desk I was told to go and sit on the red chairs which I couldn't see. I also find that even though I use a cane I walks into the wheelchairs. I feel that the reception staff do not offer help. The nurses do help and come to get me when they call. I don't understand my condition and feel that no one has taken the time to explain it to me. I have received a letter detailing my condition but it is not in an accessible format.

- When I was told partially sighted 18 months ago I was told if there was change in the sight in my good eye to come straight back - when I got there was no change but left feeling that I should not have troubled them and they were a bit offhand. When sent for a scan at 4.20pm on a Friday everyone had gone home.

- Although my appointment was in 3 separate stages the waiting time was not long. The staff was very helpful and kind.

- Patient, female over 60 years, seen at Southampton Eye Hospital August 2017. Seen by consultant and told that she needs to return in 3 months but she would now get a letter offering an appointment in 6 months. She was then to phone the eye hospital to ask for the appointment to be brought forward 3 months. After 3 telephone calls she managed to change her appointment.

CVI process

- The [CVI] process was not explained. The Queen Alexandra Hospital did it all for me, I got a letter in the post but I did not personally fill in the form. I think the hospital did it for me. It was not tactfully done, it's a big thing to lose your sight and it's not sympathetically handled. I felt I had no support and the eye clinic is too busy!

- It was simple, I was referred to Southampton General Hospital, and I was diagnosed and asked if I wanted to be registered. I said yes as I thought it would be beneficial. They gave me some information about my condition and signposted me to local groups. I was told that I needed to renew my registration from social services but then they told me that I do not need to be reassessed.

- Applied for attendance allowance, the consultant did the registration but I didn't receive any information. I was registered in Dorset because in Hampshire they are not as good and I have to pay for my mobility and reading aids.

- It was easy peasy! I gentlemen filled in a form for me, he was wonderful and I think he was funded by social services.

- I was only registered once I moved to Hampshire, I wasn't given any information at all. I had to find out how to retrain in something else to help bring in finances for my family and that needs to be easier for people with a disability. No one explained to me why I needed to be registered (Moorfields Hospital).

ECLOs

- She gave me some leaflets, they pass on information and support you. I think the ECLO referred me to the sensory loss department and who were extremely helpful and referred me on to opensight, someone from opensight visited me to help me with kitchen aids. I also have a pen friend which is marvellous!

- I saw one, they have a high turnover of staff and they help you with support. I am not allowed to see the ECLO in another hospital because of where I live.

Support facilities

- I would like a follow up, someone to ring me to check I'm okay and to see if I need anything. If I did need something I wouldn't know who to call.

- I would like to receive more support near my home and would like my transport to be more reliable

Key messages for health professionals

- I was surprised by the abruptness of discharge from the eye hospital.

- Opticians are more accessible than ophthalmologists

- Hospital transport is an issue

- Appointment systems are a pain and I never know if my transport for hospital has been booked because it doesn't say on the letter sometimes when I have to wait 3-4 hours after my appointment to be picked up to go home.

- The integration between services is poor and has a lack of communication

- The touch screens at my GP surgery are difficult to use and so I cannot visit the GP on my own

- The consultant was kind, friendly and reassuring as I was scared that I was going blind. I have my diabetic eye checks at the hospital and also the mobile unit.

- Southampton General Hospital’s eye department is great. The NHS have so many people the waits are very long - up to 3 hours. I am happy with the consultants and the care I receive.

12.3 Expenditure on problems of vision by CCG (2013-14). Portsmouth CCG highlighted in green, and comparable CCGs named. Source: NHS England[9]