



The JSNA process presents an
Eye Health
Needs Assessment
'Vision really matters'



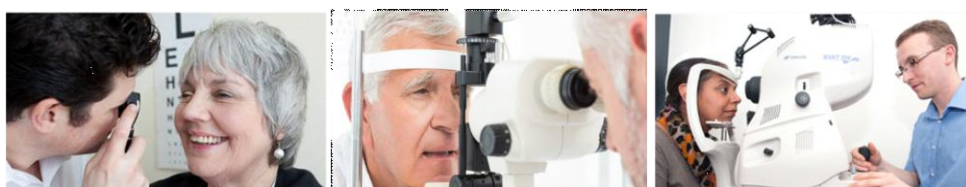
July 2014



Walsall Council



Walsall Partnership





EYE HEALTH NEEDS ASSESSMENT WALSALL

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Commissioned by Public Health from Hirji Associates

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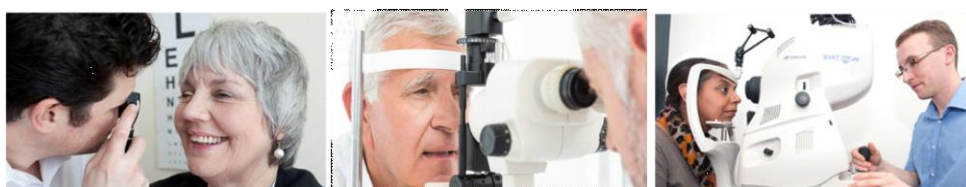
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Contents

Acknowledgements

Executive Summary

1. Introduction

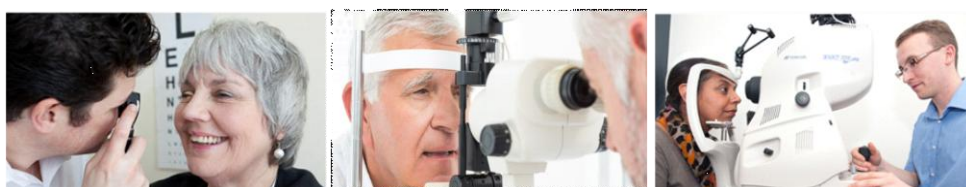
1.1	Aim.....	Page 16
1.2	The Population.....	Page 16
1.3	Eye Health.....	Page 17

2. Methodology

2.1	Estimates of the prevalence of Eye Disease.....	Page 19
2.2	The Population Data.....	Page 20
2.3	Literature.....	Page 20
2.4	Ophthalmic Activity Data.....	Page 20

3. Policy Drivers

3.1	UK Vision Strategy.....	Page 21
3.2	The Royal College of General Practitioners.....	Page 21
3.3	Public Health Outcomes Framework.....	Page 22
3.4	NHS Outcomes Framework 2013/14.....	Page 22
3.5	Quality Innovation Productivity and Prevention (QIPP) Program.....	Page 24
3.6	Social Care Outcomes Framework.....	Page 24





4. Demographics

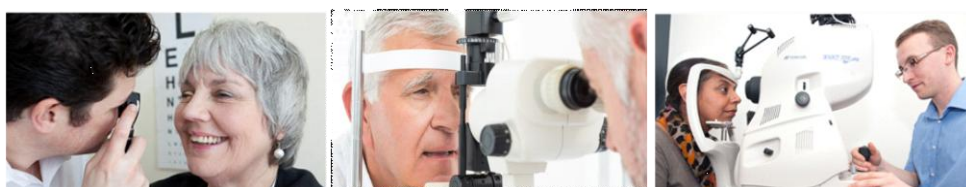
4.1	Age.....	Page 26
4.2	Ethnicity.....	Page 27
4.3	Deprivation.....	Page 30
4.4	Obesity.....	Page 32
4.5	Smoking.....	Page 33
4.6	Alcohol Consumption.....	Page 35
4.7	Literacy and Learning Difficulties.....	Page 36
4.8	Economic Disadvantage.....	Page 37
4.9	Other Aspects.....	Page 38

5. Eye Health Workforce

5.1	Primary care practitioners.....	Page 40
5.2	Secondary care practitioners.....	Page 43
5.3	General Ophthalmic Services – Primary Care.....	Page 44
5.4	Ophthalmic activity in Primary Care.....	Page 49
5.5	Outcomes of GOS sight tests.....	Page 54
5.6	Hospital Eye Services – Secondary Care.....	Page 55

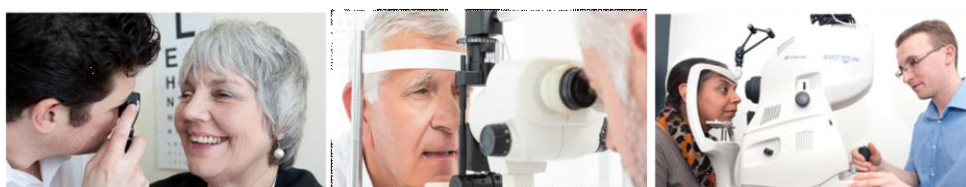
6. Sight loss, it's prevalence, detection and treatment

6.1	Refractive Errors.....	Page 64
6.2	Cataracts.....	Page 65





6.3	Age related macular degeneration (AMD).....	Page 69
6.4	Glaucoma.....	Page 72
6.5	Diabetic Eye Disease.....	Page 75
6.6	Squints and Amblyopia.....	Page 79
6.7	Referral Procedures.....	Page 82
6.7.1	Referral activity from primary care to the hospital eye service.....	Page 85
7.	Visual Impairment	
7.1	Definition of Visual Impairment.....	Page 88
7.2	Severely Sight Impaired and Sight Impaired.....	Page 89
7.2.1	Low Vision.....	Page 94
7.3	Public Health Indicator.....	Page 97
7.4	Burden of Visual Impairment.....	Page 100
8.	Public Perceptions of Eye Health	
9.	Recommendations	
10.	Glossary	
11.	References	
12.	Appendices	





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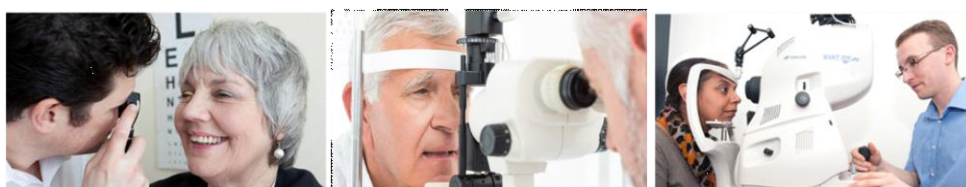
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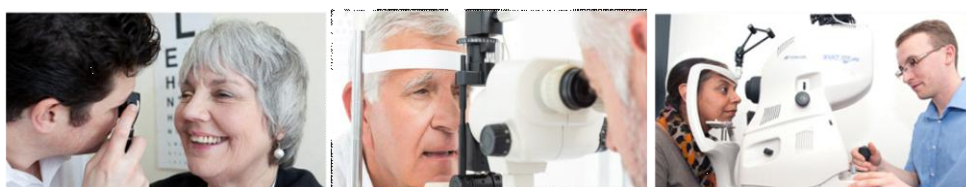
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Executive Summary

The Joint Strategic Needs Analysis (JSNA) for Walsall 2013, identifies demographic, lifestyle characteristics, and health determinants in Walsall's population. However it makes no direct reference to eye health.

This Eye Health Needs Assessment (EHNA) is aimed at enabling Public Health Walsall and its partner organisations to:

1. To improve local knowledge of eye health in relation to the perceived, current and predicted, needs of the resident population of Walsall
2. To use this local knowledge to influence current eye care services and commissioning of future eye care services and to better manage avoidable sight loss.

Its recommendations will endeavour to:

1. Identify priorities for improving eye health
2. Reduce eye health inequalities
3. Outline the direction for the development of NHS eye care services

It reviews the needs of specific high risk groups and draws on existing data wherever possible. It concentrates on the main causes of sight loss and draws from the key publications and findings of the JSNA published by Walsall Public Health.

Visual impairment (VI) (when a person has sight loss such that the level of corrected vision is below that which the individual requires for their everyday tasks) has a very significant impact on the quality of life.





Ageing, ethnicity, obesity, deprivation, alcohol consumption, learning disability, smoking, the demographic and lifestyle characteristics identified in the population of Walsall are known risk factors in one or more of the following eye conditions that cause visual impairment:

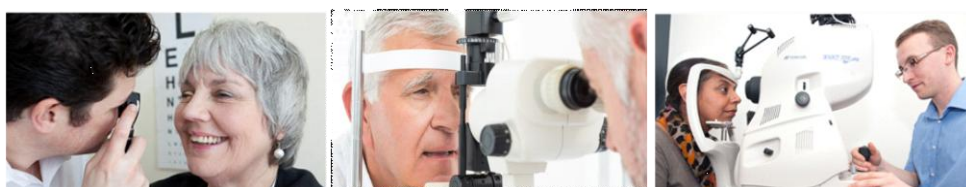
- Refractive Errors - an error in the focussing of light by the eye to a sharp focus precisely on the retina, resulting in a blurred retinal image
- Cataract - a loss of clarity the eye's normally clear lens, causing difficulties in seeing clearly.
- Age-Related Macular Disease (AMD) – a deterioration of part of the back of the eye responsible for the sharp, central vision needed to see detail e.g. reading (using the macula).
- Glaucoma - a group of eye diseases often associated with abnormal internal eye pressure, leading to damage of the optic nerve at the back of the eye and consequently sight loss
- Diabetic Retinopathy – abnormal and/or damaged blood vessels at the back of the eye (retina) caused by changing blood sugar levels.

Key Messages

Visual impairment affects people of all ages, but its prevalence increases with age.

Ethnicity is a major factor in eye disease, with some groups more at risk than others.

Area and individual level deprivation are both associated with late presentation of eye disease (Fraser *et al* 2001).





Obesity is a risk factor for four major causes of visual impairment including age related macular disease (AMD), diabetic retinopathy, glaucoma and cataracts.

The link between smoking and Age Related Macular Degeneration (AMD), a major cause of visual impairment in the UK, is as strong as the link between smoking and lung cancer. Smoking also accelerates formation of cataracts.

Drinking large quantities of alcohol may cause nutritional problems and may lead to toxic amblyopia (lazy eye), and optic nerve disease. Alcohol consumption during pregnancy can lead to foetal alcohol syndrome, which can lead to ocular anomalies in the baby.

People with learning disabilities are 10 times more likely to have serious sight problems than other people.

The evidence on falls, suggests that people with visual impairment are 1.7 times more likely to have a fall and 1.9 times more likely to have multiple falls compared with fully sighted people. When VI is actively addressed as part of a falls reduction plan, falls can be reduced by up to 14%.

There are an estimated 7,310 people living with sight loss in Walsall and there will be an estimated 8,350 people living with sight loss in 2020 if matters carry on as they are.

There are an estimated 2,460 people living with cataracts in Walsall and we know due to the ageing population this is going to grow rapidly.

There is a significant increase of direct referrals for cataract surgery from optometric practices but the conversion rate is only about 50%.





The National Eye Health Epidemiological Model (NEHEM) suggests that there are 6156 people in Walsall who are living with Age-related Macular Disease.

The mean NEHEM estimate of prevalence of glaucoma in Walsall is 1.45% which is most likely underestimate and a more realistic figure would be almost 3% of the population based on other work conducted in Bradford. There are an estimated 2,290 people living with glaucoma in Walsall.

There are 5080 people living with diabetic retinopathy in Walsall. The screening service manages to screen for retinopathy in 67.7% of Walsall's diabetic population placing the service in the bottom (4th quintile) nationally for performance.

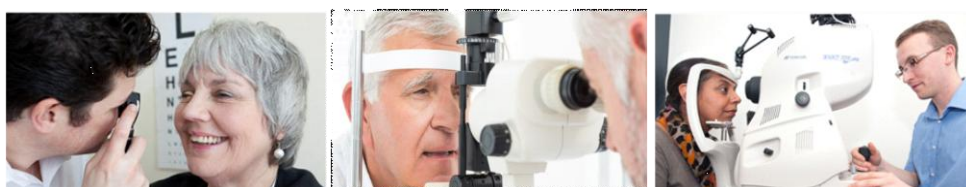
Substantially more male than female optometric practitioners are performers in Walsall compared to the national average in the profession.

There are fewer practitioners per 100k population in Walsall compared to the national picture and substantially lower than a neighbouring statistically equivalent PCT.

Fewer practices are located in the East of the Borough and outside the inner ring road where the majority of the older population live and considerable areas of Walsall are not within 15 minutes walking distance to an optometric practice.

Optometrists are the major provider of General Ophthalmic Services (GOS) in England. The same is true for GOS providers in Walsall.

There is a steady increase over the past 5 years of 9% for total NHS sight tests and 17% for Domiciliary NHS sight tests which account for





about 3% of the total sight tests done under the NHS in England. In Walsall this is marginally below the National average for the same period – 8%) with a peak in 2011/12 with an increase of 11.7% in domiciliary tests.

There is a significant decrease in the over 60s taking up their NHS sight tests in Walsall.

There is no data available or collated on referrals from GOS sight tests specifically for Walsall.

In secondary care eye clinics at the Manor and New Cross hospitals, there is a rapidly-growing demand for their services due to new and emerging treatments for eye diseases.

The school vision screening programme in Walsall follows the National Screening Committee's (NSC) recommended vision screening programme of children and there is no evidence to suggest changing this service.

A pilot of a Community Based Ophthalmology Triage service for a cluster of GP practices in Walsall, judged on cost effectiveness, was deemed not to be viable in its current format and will cease in April 2014.

There is significant under reporting of sight impaired (SSI) and severely sight impaired (SI) patients in Walsall which has 760 people on the SSI register, 845 on the SI register. Based on the information provided by Walsall Society for the Blind (WSftB), the "preventable sight loss" indicator for Walsall was 59% for 2011 and 67% for 2012 indicating a worsening outcome.

There is currently no Low Vision Services Committee (LVSC) to develop and oversee the provision of low vision services in Walsall.



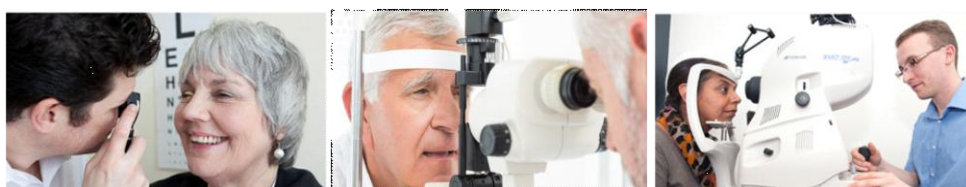


Walsall has a higher rate of emergency admissions for fractured neck of femur both regionally and nationally, for those aged over 65.

A survey of 4,000 adults in the UK commissioned by the College of Optometrists in 2012 found that the public are not well-versed about eye health.

Key Recommendations

1. Educate local people about eye care and encourage at risk groups to have regular eye tests with an Optometrist.
2. Review access to optometry to ensure that older people in Walsall who are at risk from sight loss are able to get easy access to regular sight tests.
3. Ensure that children and young people who are identified as having special educational needs (SEN) or learning difficulties have a routine sight test once a year.
4. Ensure that patient conditions/events/lesions associated with sight loss or increased risk of sight loss, are linked and patients referred for eye tests particularly patients with:
 - i. Strokes
 - ii. Learning Disabilities
 - iii. Dementia
 - iv. Falls
 - v. Diabetes





vi. Depression

.....and individuals living in Residential/Nursing Homes.

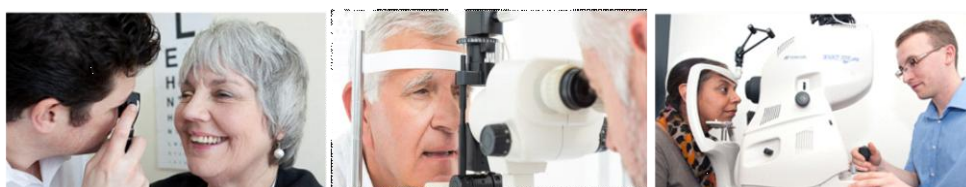
5. Eye health and well-being should be raised at all healthcare encounters so that eye problems do not go un-recognised by developing ways of integrating “eye-health” messages across different parts of the healthcare, charities for older people, and public sectors
6. Expand the role of primary eye care providers in Walsall where there is evidence to do so to create a seamless service, whilst reducing the burden placed on GPs and secondary care.
7. Re-instate the low vision services committee (LVSC) for Walsall and include representations from all stakeholders.
8. Ensure that the provider of the Digital Diabetic Retinopathy Screening Service is able to raise the performance level to 80+% of diabetics in Walsall very quickly, and include specific requirements and penalties in the contract to make this happen.
9. Enable electronic referrals and tele-optometry for communications between GPs, optometry and ophthalmology
10. Convene a multi-disciplinary group of healthcare and social care practitioners to agree and implement a falls strategy which covers both prevention of falls in people with sight loss and supporting those have experienced a fall.





11. Revise and create an electronic version of the GOS suite of forms to address the lost opportunities to collect and analyse primary care data.

12. Review the provision of ophthalmology services at the Manor hospital for Walsall residents.





1. Introduction

An (eye) health needs assessment may be defined as a systematic method for reviewing the (eye) health issues facing a population, leading subsequently to agreed priorities and resource allocation to improve (eye) health and reduce inequalities (Cavanagh & Chadwick, 2005).

1.1 Aim

This Eye Health Needs Assessment (EHNA) is aimed at enabling Public Health Walsall and its partner organisations to:

3. To improve local knowledge of eye health in relation to the perceived, current and predicted, needs of the population
4. To use this local knowledge to influence current eye care services and commissioning of future eye care services and to better manage avoidable sight loss.

Its recommendations will endeavour to:

4. Identify priorities for improving eye health
5. Reduce eye health inequalities
6. Outline the direction for the development of NHS eye care services.

1.2 The Population

This is the resident population of Walsall located in the West Midlands. It is one of the four local authorities within the Black Country sub-region (along with Sandwell, Dudley and Wolverhampton). Recent estimates put the population of Walsall at just over a quarter of a million and current projections suggest that this will continue to increase over the next 20 years.





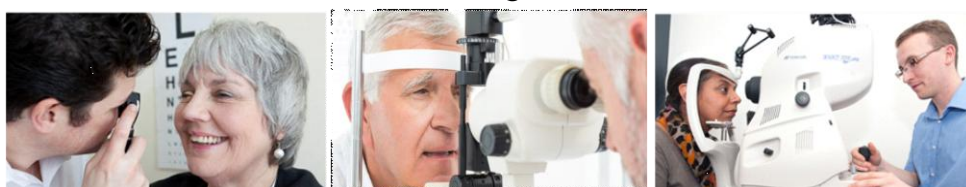
The “local” population considered in this assessment is the resident population of Walsall. This comprises the combined populations of the following wards:

Aldridge Central and South, Aldridge North and Walsall Wood, Bentley and Darlaston North, Birchills Leamore, Blakenall, Bloxwich East, Bloxwich West, Brownhills, Darlaston South, Paddock, Palfrey, Pelsall, Pheasey Park Farm, Pleck, Rushall-Shelfield, St Matthew's, Short Heath, Streetly, Willenhall North, Willenhall South.

1.3 Eye Health

The issues under review are eye conditions that lead to impaired vision (i.e. sight loss such that the level of vision is below that which the individual requires for their everyday tasks and includes severely sight impairment (blindness) or sight impairment (partial-sight)) if undetected, but may be preventable if detected and managed appropriately. The Royal College of Ophthalmologists estimate that in England and Wales, around 4.3 million people aged 65 and over already have sight loss (Visual Acuity of less than 6/12) in one or both eyes. Of these, 2.4 million have sight loss in both eyes (RCOphth 2002).

The main causes of permanent visual impairment have been identified as age related macular degeneration (AMD), glaucoma and diabetic retinopathy (Bunce *et al* 2010). Cataracts and uncorrected refractive error also cause visual impairment which may easily be resolved with appropriate treatment. All of these conditions are covered in this assessment. Walsall Clinical Commissioning Group along with NHS England currently may commission eye care services on behalf of the Walsall population. This EHNA will review the needs of specific high risk groups and will draw on existing data wherever possible. It will concentrate on the main causes of sight loss and draw from the key





findings of the Joint Strategic Needs Analysis already published by Walsall Public Health.

The Department of Health's Commissioning Framework for Health and Wellbeing (DoH 2007-8) established a duty on Local Authorities to produce a Joint Strategic Needs Assessment (JSNA). This is an on-going process by which Local Authorities, Clinical Commissioning Groups and partner organisations describe the future healthcare and wellbeing needs of the local population, to inform the commissioning of services.

Although there has been some activity within NHS Walsall the past regarding eye health including:

- A review of the compliance to the General Ophthalmic Services contract.
- Development of a Referral Guidance for optometric and general medical practitioners (GPs)
- Development of a more up-to-date referral form for optometrists to use to refer patients to GPs or into secondary care
- Development of a formulary for optometrists
- Activity to promote uptake of sight tests

However, the current JSNA for Walsall makes no direct reference to the eye health needs of the population and there is no specific EHNA currently available for Walsall.





2. Methodology

The approach to this Needs Assessment is split into three distinct phases:

1. Identification of the data required to be collected to support the needs assessment;
2. Collection of the data identified;
3. Analysis of the data culminating in the production of the Needs Assessment report and recommendations.

In order to gain a full picture of eye care services two types of data are collected. The first is “hard” data; the numerical data relating to actual activity, e.g. number of NHS Sight Tests conducted in a given period etc. To collect this data, various databases were interrogated. The second type of data, “soft” data, relates to the non-tangible information such as stakeholder views and perceptions. In order to obtain this information, meetings/interviews were held with various stakeholders. These individuals and organisations are listed on the acknowledgements page. In addition to this, questionnaires are to be administered to specific risk groups to better understand perceptions of eye health issues from a user perspective.

2.1 Estimates of the prevalence of Eye Disease

The National Eye Health Epidemiological Model (NEHEM) has been used to estimate the prevalence of glaucoma, cataract and macular degeneration in Walsall's population. The estimates predicted by the model relate to the 2001 census data. Although somewhat out of date, it is the only significant material available in this field, and very important since the literature on prevalence of eye disease in the UK population is





very limited. Where appropriate and when available, more recent estimates are included and referenced/acknowledged. Data for the severely sight impaired (SSI) and Sight Impaired (SI) are taken from the Registered Blind and Partially Sighted People Year ending 31 March 2011 data set, and data from Royal National Institute for the Blind's (RNIB) Sight Loss Data Tool for estimates of eye lesions in the population. The Public Health Outcomes data by Public Health England is referred to as appropriate. Other sources are referenced at the end of this document.

2.2 The Population Data

The population figures are taken from the projected figures for 2012 available from the Office of National Statistics (ONS) and referenced in Walsall's Joint Strategic Needs Assessment Refresh (Nov 2013)

2.3 Literature

Key web sites included in the literature search include those of NICE, RNIB, College of Optometrists, Royal College of Ophthalmologists, Health and Social Care information Centre, 2011-12 programme budgeting guidance, commissioning for eye care, NHS Atlas of Variation of Healthcare 2011 and NEHEM.

Literature was accessed using various Internet portals and search engines to ensure reasonable coverage of published works.

2.4 Ophthalmic Activity Data

Information relating to general ophthalmic services was sourced from the NHS Information Centre (www.hscic.gov.uk).





3. Policy Drivers

3.1 UK Vision Strategy

Developed in response to the World Health Assembly Vision 2020 resolution, the aim of the UK Vision 2020 strategy is to eliminate avoidable blindness by the year 2020 (RNIB 2008). The Department of Health is committed to supporting the strategy developed which is adopted by an alliance of statutory health and social care bodies, voluntary organisations, eye health professionals and service users in the UK. It has three key outcome aims:

- everyone in the UK looks after their eyes and their sight;
- 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; and
- UK society is one in which people with sight loss can fully participate.

3.2 The Royal College of General Practitioners has chosen eye health, with a focus on ageing and sight loss, as one of its clinical priorities for the next three years until March 2016. It aims to:

- reduce preventable sight loss amongst patients aged 65 and over; and
- provide more effective management of patients with eye conditions.





3.3 Public Health Outcomes Framework

Indicator 4.12 of the recently published public health outcomes framework – a report that measures the performance of mainly Public Health actions in the Local Authority - confirms a commitment to reduce avoidable blindness that mirrors the Vision 2020 UK aim of avoiding preventable blindness by the year 2020. This states:

“4.12 Proportion of Certificate of Visual Impairment (CVI) registrations that are due to age related macular degeneration (AMD), glaucoma and diabetic retinopathy” Other relevant indicators include:

2.24 Falls and Injuries in the over 65's

4.14 Hip fractures in the over 65's

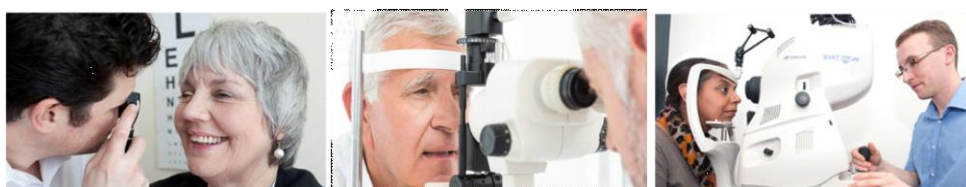
2.23 Self reported well being

14.13 Health related quality of life for older people

Improvements in the additional indicators listed may also be assisted by improvements in eye health. It has been shown that visual impairment is a risk factor for falls in older people (Scuffham *et al* 2002). People with visual impairment are more likely to be depressed (Evans *et al* 2007). Self-care for other systemic conditions is likely to be affected in people with vision impairment (Douglas *et al* 2006) resulting in poorer health outcomes for these patients than those who are not visually impaired.

3.4 NHS Outcomes Framework 2013/14

The NHS Outcomes Framework 2013/14 sets out the outcomes and corresponding indicators that will be used to hold the Commissioning Groups to account for improvements in health outcomes.





Understanding and addressing eye health and sight loss needs can support all five domains of the Outcome Framework. These are:

Domain 1 Preventing people from dying prematurely

Domain 2 Enhancing quality of life for people with long- term conditions

Domain 3 Helping people to recover from episodes of ill health or following injury

Domain 4 Ensuring that people have a positive experience of care

Domain 5 Treating and caring for people in a safe environment and protecting them from avoidable harm.

Domains 1, 2 and 3

Sight loss contributes to premature death (Saaddine *et al* 2003) and is an indicator of deteriorating health in conditions such as diabetes. Those who have sight loss in addition to other conditions such as stroke, for instance, often have poorer outcomes than those without sight loss.

Sight loss can reduce people's resilience to the adverse effects of ill health and injury in general. It increases frailty and reduces levels of mobility.

Domains 4 and 5

The most frequent users of NHS services are those aged 60 and over. They also make up the largest group of those who have problems with their sight. This correlation needs to be borne in mind in order to ensure accessibility of service provision and information.





3.5 Quality Innovation Productivity and Prevention (QIPP) Programme

Ophthalmology has been identified by Walsall CCG as being an area in which they feel may benefit from development under the Quality Innovation Productivity and Prevention (QIPP) programme (Gill 2013).

There is scope to better use the available workforce and improve treatment pathways for patients as outlined by the National Eye care Steering Group 1st Report (Busby 2004).and subsequently by others (Bosanquet 2008, Hirji 2010)

3.6 Social Care Outcomes Framework

The Adult Social-Care Outcomes Framework encompasses four domains. These are:

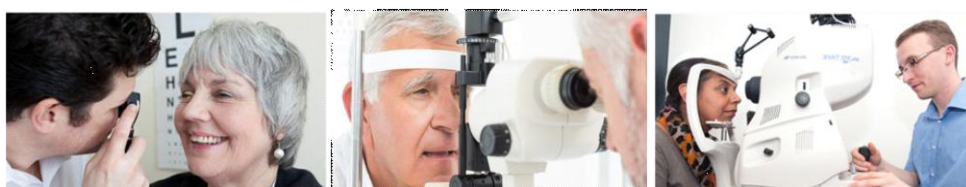
1. Enhancing quality of life for people with care and support needs.
2. Delaying and reducing the need for care and support.
3. Ensuring people have a positive experience of care and support.
4. Safeguarding people whose circumstances make them vulnerable and protecting from avoidable harm.

All four of these outcomes are affected by visual impairment which is a risk factor for falls in older people (Scuffham *et al* 2002) and people with visual impairment are more likely to be depressed (Evans *et al* 2007). Self-care for other systemic conditions is likely to be affected (Douglas *et al* 2006) resulting in poorer health outcomes for these patients than those who are not visually impaired. Untreated visual impairment and eye disorders affect a substantial proportion of people aged 65 years and older (Reidy *et al* 1998). As many as a third of people with a learning disability also have sight impairment. People with Down's





syndrome are particularly likely to have eye problems. The prevalence of sight problems increases dramatically with the severity of the learning disability and with age.

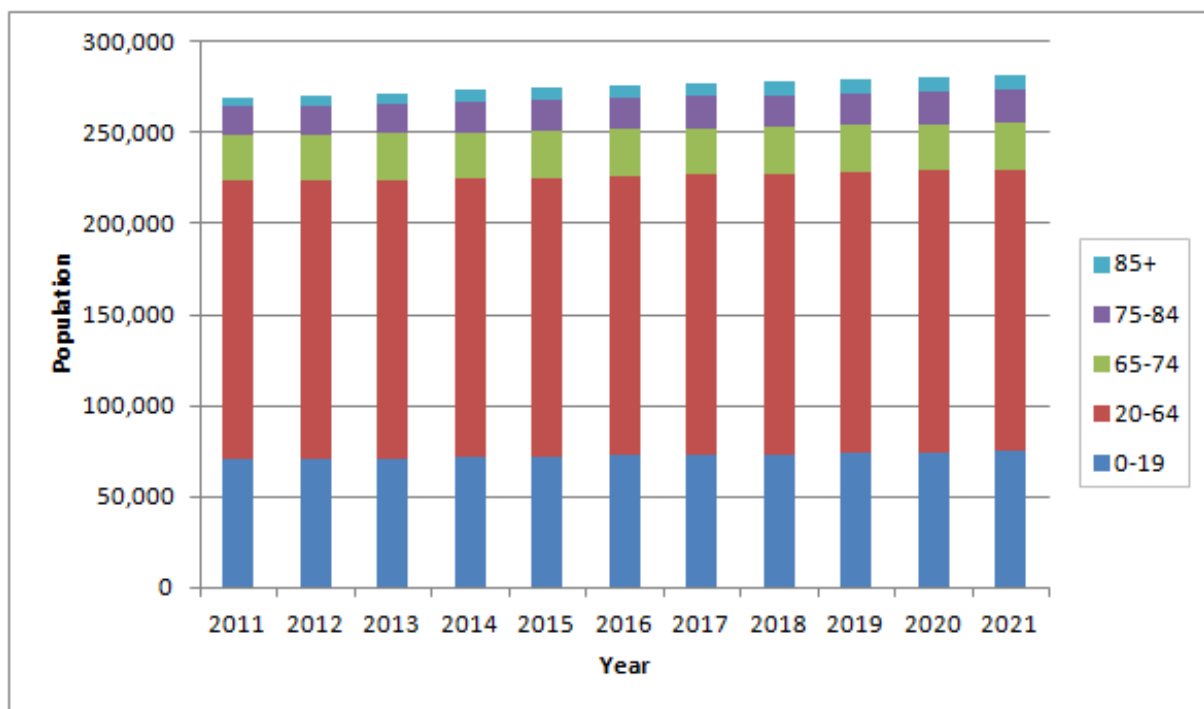




4. Demographics

4.1 Age

Walsall's overall population is predicted to increase over the next 10 years by 4.5% from 269,500 in 2011 to 281,700 in 2021. In addition to this, Walsall's older population (those aged 65 and above) is also predicted to increase by 12.9%, with the number of people 85 year and older increasing from 5,467 in 2008 to 8,109 in 2021.



Walsall population projections, by age 2011-2021 (Source: Walsall JSNA 2013, ONS)

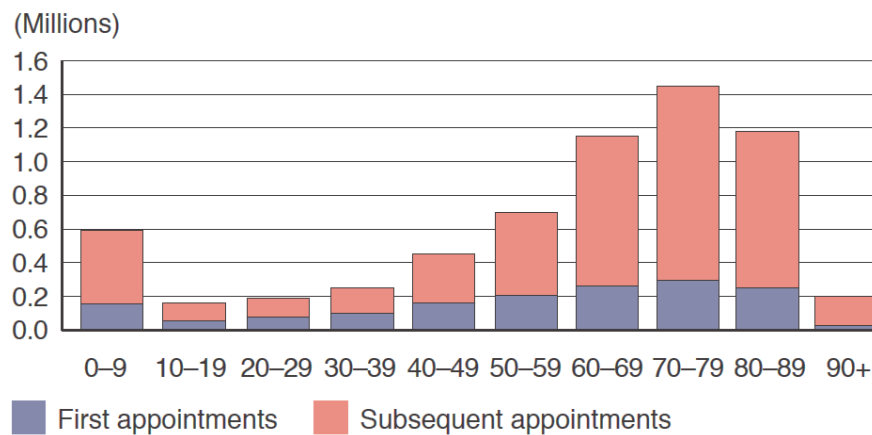
Impact on Eye Health

Most causes of visual impairment in the UK are conditions that develop as one gets older. Some 80% of people with visual impairment are over 65. Visual impairment is common in the older population and this risk increases rapidly with advancing age, especially for women (Evans *et al* 2002). Untreated visual impairment and eye disorders affect a





substantial proportion of people aged 65 years and older (Reidy *et al* 1998)



Ophthalmology Outpatients by Age England 2011-12

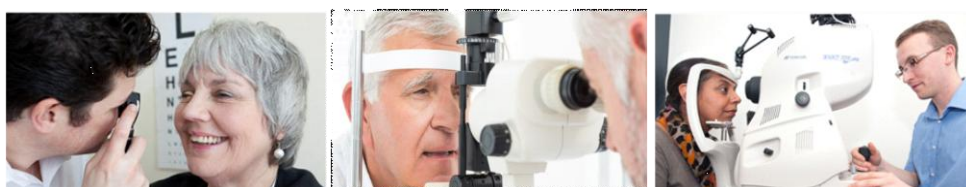
Source: RNIB 2014

However, losing vision is not an inevitable part of ageing. It is often the result of eye conditions that can either be treated or sometimes even prevented. If left un-addressed this can lead to low vision and ultimately sight impairment as a result of the following:

- Uncorrected refractive errors
- Cataracts
- Glaucoma
- Age-related Macular Degeneration (AMD)
- Diabetic Eye Disease (e.g. retinopathy)

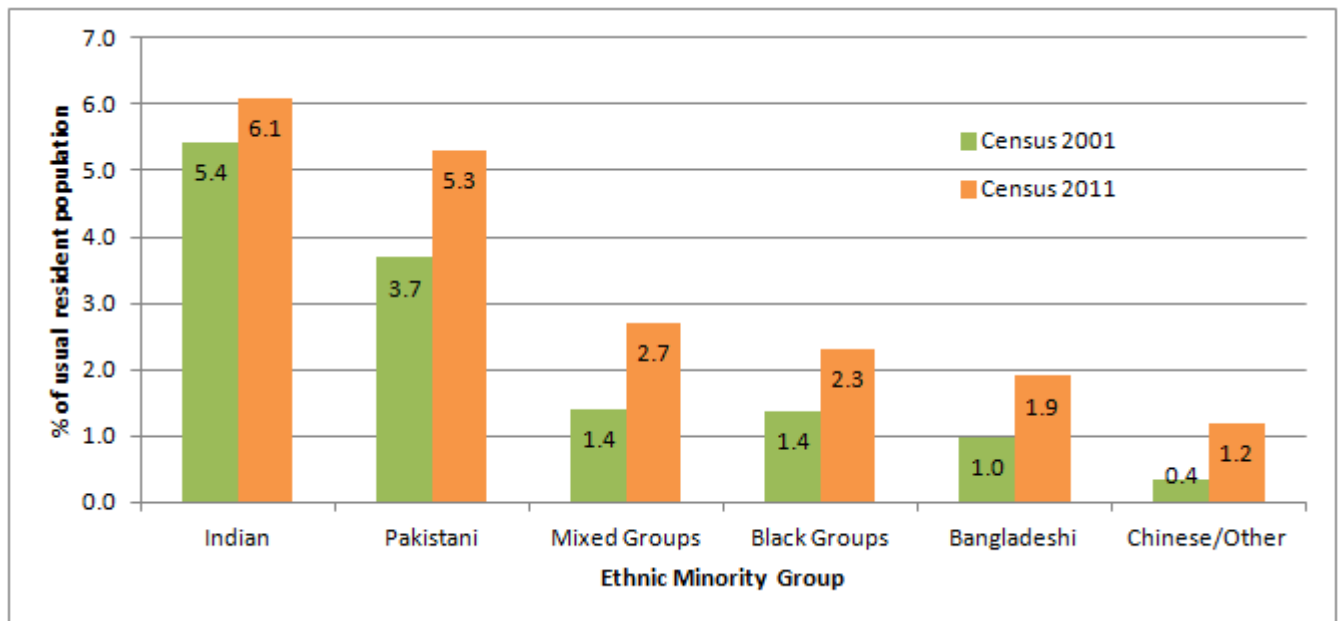
4.2 Ethnicity

Walsall also has an ethnically-mixed population (19.5% of the usual resident population are from ethnic minority groups). People of Indian, Pakistani and Bangladeshi background form the largest minority ethnic groups in Walsall. The number of Non-UK Born residents in Walsall has





increased by 3.7% (or 9,859 people) between the 2001 and 2011 censuses.

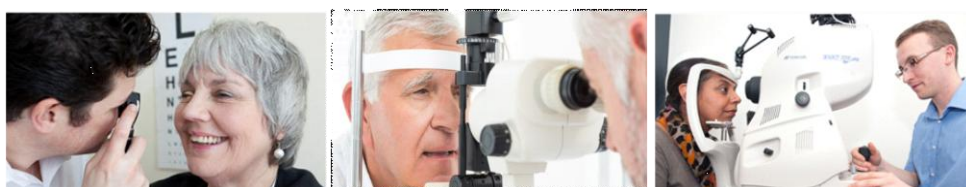


Minority ethnic group trends in Walsall 2001-2011 (Source: Walsall JSNA 2013, ONS)

Impact on Eye Health

Bhalla and Blakemore (1981) reported high rates of sight problems (61% for African- Caribbean and 53% Asian contrasted with 52% for an older white control population) in the black and minority ethnic (BME) community. Das *et al* (1994, 1990), examined 377 people and found that Asians had a significantly higher prevalence of cataract compared to people of European descent (30% compared to 3% in people aged under 60 years and 78% compared to 54% in those aged 60 years and over). The markedly higher prevalence of cataract in Asians in the under 60s suggests an earlier onset of the condition in Asian people

Ethnicity is also an important factor in development of AMD. Unlike many of the other eye conditions, white populations are more susceptible to AMD, followed closely by Chinese people (Klein *et al.*, 2006).

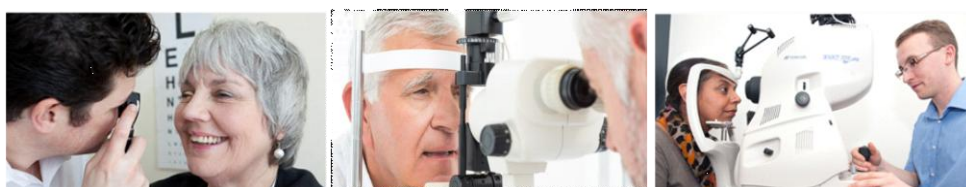




The black population has a greater risk of developing AMD compared to the white population in younger age groups, whereas the white population has a greater risk of developing AMD in the latter years of life; Asians are at lower risk than whites of AMD (Friedman *et al* 2004; Das *et al* 1994). Asians have a greater risk of developing cataracts compared to the black population and white population (Kempen *et al* 2004; Das *et al* 1994). Black and Asian populations have a greater risk of developing diabetic eye disease compared to the white population (Kempen *et al* 2004; Das *et al* 1994). The relative risk of glaucoma is much higher for the black population compared to the white population (Friedman *et al* 2004a; Wormald *et al* 1994). The white population has the greater risk in developing refractive error compared to the black population (Kempen *et al* 2004a).

This susceptibility is compounded, according to RNIB, because black and minority ethnic groups are among the hardest to reach with healthcare messages and are less likely than their white counterparts to have their eyes examined.

For other eye disease, no robust differences in relative risk as a result of ethnicity have been found (Munier *et al* 1998; Ghafour *et al* 1983).





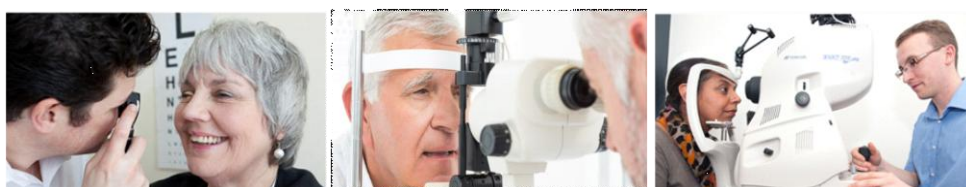
AFRICAN-CARIBBEAN	++	+(old) ++(young)	++++	++++	+
ASIAN	++++	++	+	+++	++
EUROPEAN	++	++++(old) + (young)	+	+	++++
CHINESE		+++			

Relative risk of ocular conditions from the literature (+ = low, ++++= high)

4.3 Deprivation

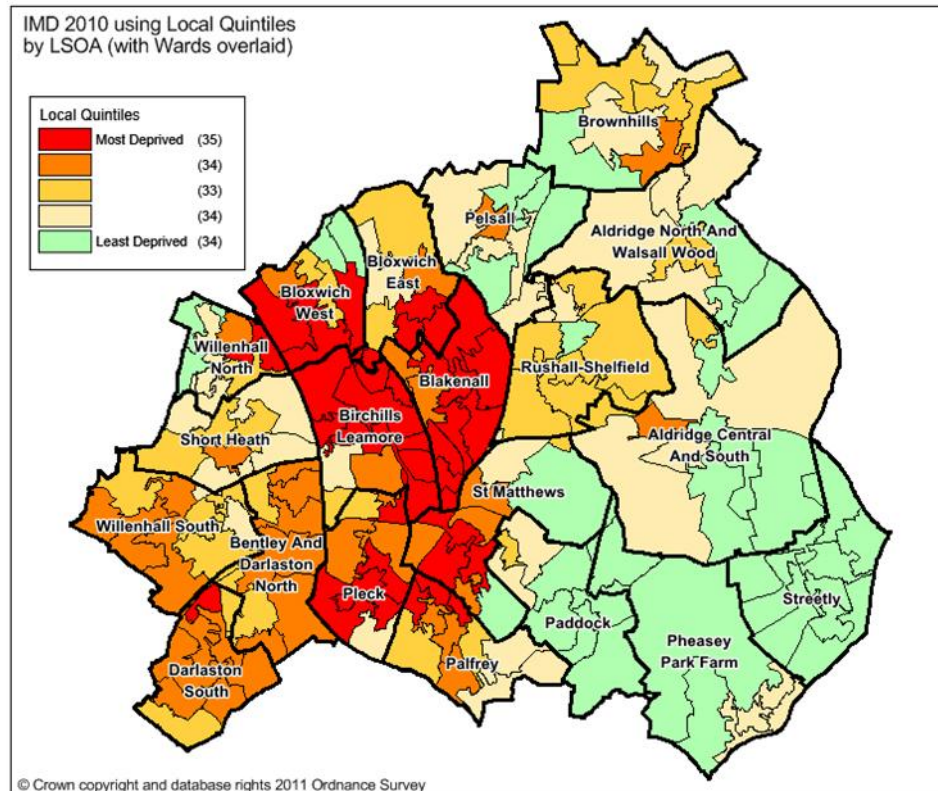
In 2010, Walsall was ranked as the 30th most deprived of the 326 Local Authorities in England. This position has worsened since the last data release in 2007, where Walsall ranked 45th out of 354. The borough fares particularly badly in terms of education, income and employment deprivation. Central and western parts of the borough are typically more deprived than the east. However, while some parts of the borough such as Blakenall are among the most deprived in the borough, others rank within the very least deprived (see Figure below).

The figure below also details that 114,800 (44.6%) of Walsall's total population (2010 mid-year estimates) live within the most deprived quintiles compared to 30,400 (11.8%) living in the least. Looking specifically by age, 28,100 (52.3%) of 0 to 15 year olds live within the most deprived quintiles in Walsall and 16,100 (35.5%) of over 65's. This compares to 5,000 (9.2%) of 0 to 15 year olds living within the least deprived quintiles in Walsall and 7,000 (15.6%) of over 65's.





Walsall LSOA deprivation using Local Quintiles (Source: Department for Communities and Local Government) cited Walsall JSNA 2013



Impact on Eye Health

Area and individual level deprivation are both associated with late presentation of eye disease (Fraser *et al* 2001). Furthermore evidence shows that late presentation is an important risk factor for subsequent severe sight impairment (SSI) and deprived groups seem to be at greater risk of becoming SSI. Variations in cataract presentation correlate well with social deprivation indices and poor use of optometric services (Goyal *et al* 2004)



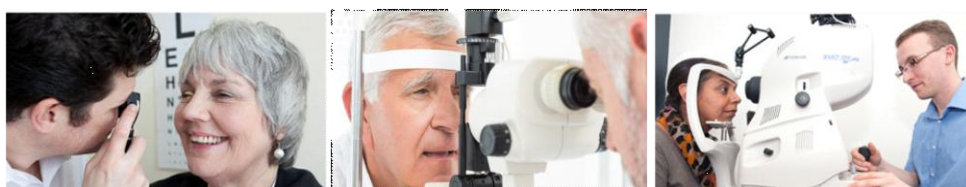


4.4 Obesity

Obesity is a very significant public health challenge for Walsall. The Foresight Report (2007) predicts that by 2015, 36% of men and 28% of women aged 21-60 living in England will be very overweight (clinically obese); it is likely that rates in Walsall will be even higher. In 2011, around 1 in 4 adults in England were classed as obese (25% men and 26% women (Health Survey for England)). By 2050 obesity is predicted to affect 60% of adult men, 50% of adult women and 25% of children (Foresight 2007). Obesity is a very significant contributor to illness and premature death in the borough. Serious health consequences include Type II diabetes, cardiovascular disease, liver disease, musculoskeletal disorders such as osteoarthritis, and certain cancers. Without action, overweight and obesity-related diseases will cost NHS Walsall an estimated £82 million per year by 2015. It is estimated that obesity-related illness will result in the loss of 43,000 working days, £9m-£14.5m in lost earnings and a £40m loss to the wider economy in Walsall (JSNA Refresh Nov 2013). It is estimated that in Walsall around 55,000 adults (26%) are obese and around 130,000 (62%) are overweight or obese (Health Survey for England 2008 prevalence estimates applied to locally registered population). Childhood Obesity Rate for Year 6 (10 and 11 Year Olds) is increasing in Walsall and is higher than the Peer Group, West Midlands and England average.

Impact on Eye Health

Obesity is a risk factor for all four major causes of visual impairment: Age related macular disease (AMD), diabetic retinopathy, glaucoma and cataracts (Habt-Wilner, Z, and Belkin, M, 2005). Other eye conditions, such as retinal vein occlusion, and hypertensive retinopathy, can also





result from high blood pressure and raised levels of cholesterol due to obesity. Obesity increases the risk of developing dry AMD, the type of AMD that has been linked to slow progressive damage of the retina. More significantly obesity appears to increase the rate of progression of wet AMD, the type of AMD that can lead to severe sight impairment. There is evidence that people who have a genetic predisposition for developing AMD (i.e. who have a gene defect that has been linked with AMD) need to be particularly careful to avoid weight gain since their risk increases from a fourfold risk with normal weight to an eleven fold risk if they are obese (Schaumberg, DA *et al.*2006). Obesity significantly increases the risk of developing type 2 diabetes and thereby potentially diabetic eye disease. This includes diabetic retinopathy and its complications, early cataracts and potentially other vascular lesions of the eye. Given the high lifetime risk of developing diabetes associated with early obesity, this obesity in children is likely to translate into diabetes in later life. This in turn will increase the number of people risking sight loss through diabetic retinopathy as 60 per cent of people with type 2 diabetes will go on to develop this condition. For people whose Body Mass Index is over 30, the risk of developing cataracts can be as high as double that of people who are not overweight. Obesity is a well-known risk factor for the development of cardiovascular disease, and high blood pressure. High levels of cholesterol in people who are obese can result in a thickening and hardening of retinal arteries that in turn may press on retinal veins, causing a blockage called retinal vein occlusion (Williamson (1997), Wong (2005)). Due to the blockage the vein cannot drain the blood out of the retina causing blood to leak out onto the retina resulting in painless visual impairment. The risk of vein occlusion quadruples with obesity.





4.5 Smoking

Smoking is still the single greatest cause of illness and premature death in England, killing one in two smokers prematurely. For each cigarette smoked, a smoker's life span is shortened by about five minutes. Those who die as a result of a smoking related illness will have lost, on average, 10-15 years of life. According to Walsall's health profile for 2012, there were 242 smoking related deaths in Walsall per 100,000 population of 35 years and over (for the period 2008-10). This has reduced from 256 during the period 2007-09 but is still significantly higher than the England average of 211 deaths per 100,000 (2008-10). Smoking is the single biggest modifiable risk factor for cancer and heart disease and a major aetiological factor for lung cancer (84% of all deaths), cardiovascular disease (17% of all heart disease deaths) and respiratory diseases, such as chronic obstructive pulmonary disease (COPD) (84% of deaths from COPD).

The estimated prevalence for smoking within the Walsall population is 22.7%, representing approximately 45,000 adults. In line with the general population smoking prevalence has been high in Walsall but in the last 12 months huge improvements have been made within maternity services. The rate of women who were reported as smokers at the time of delivery at end of March 2013 has fallen to 15.1% although this is still high compared to the regional rate (14.2%) and the national rate (12.8%).

Impact on Eye Health

The link between smoking and Age Related Macular Degeneration (AMD) a major cause of visual impairment in the UK, is as strong as the link between smoking and lung cancer (McLaughlin, B (2005), Thornton *et al* (2005)). Smoking is also linked to the development of cataracts





(Kelly *et al* (2005). Smoking can make diabetes related sight problems worse. Smoking increases free radicals, which accelerate ageing, and alters the body's ability to absorb or extract necessary vitamins and minerals from food. Passive smoking is almost as harmful as smoking yourself (Khan, JC *et al.* (2006)). For those who have a genetic disposition to AMD (i.e. they have a family member who has it) then smoking substantially increases their risk of having AMD (Schidt S *et al.*(2006),Despriet DG *et al.*, (2006))

4.6 Alcohol Consumption

Walsall has an estimated 34,058 hazardous drinkers, 33,550 binge drinkers and 10,174 harmful drinkers. The estimate (based on a population of 269,323) for the number of people who are alcohol dependent is: 10,772.

Impact on Eye Health

Drinking large quantities of alcohol may cause nutritional problems and may lead to toxic amblyopia, an optic nerve disease. Excessive alcohol intake during pregnancy can lead to foetal alcohol syndrome, which can lead to ocular anomalies (Carter RC *et al.*2005) in the baby.

Alcohol abuse, particularly in heavy smokers who have also neglected their diet, is known to cause a toxic, progressive optic neuropathy. This can cause painless visual impairment in both eyes with loss of colour vision and a central visual field defect. (The Royal College of Ophthalmologists). Half of all violent crimes are alcohol-related and about a 40% of all domestic violence incidents are linked to alcohol misuse (www.alcoholissues.co.uk). It is inevitable that some of these events will include sight-threatening eye injuries.





4.7 Literacy and Learning Difficulties

Children and young people who are identified as having special educational needs (SEN) often struggle to get the support they need to do well in society. For several years the percentage of pupils in Walsall with SEN with and without a statement has consistently been below the West Midlands and England averages, illustrated in Figures below.

	Pupils with a statement of special education needs				Pupils with SEN, without a statement			
Year	2010	2011	2012	2013	2010	2011	2012	2013
Walsall	2.1	2.1	2.1	2.2	15.0	15.1	14.2	13.0
West Midlands	3.0	3.0	3.0	3.0	18.3	18.1	17.4	16.4
England	2.8	2.8	2.8	2.8	18.3	17.8	17.0	16.0

Source: Walsall JSNA 2013

Estimates of persons in the Walsall's population per 1000 who have learning difficulties

Population	Period	Local value	Eng. value	Eng. lowest	Range	Eng. highest
1 Adults with learning disability known to GPs	2011-12	4.33	4.54	2.08		7.88
2 Adults (18 to 64) with learning disability known to Local Authorities	2011-12	4.18	4.27	2.36		8.83
3 Children with autistic spectrum known to schools	Jan2012	5.62	8.17	2.36		19.71
4 Children with moderate learning difficulties known to schools	Jan2012	20.40	19.65	6.50		51.36
5 Children with severe learning difficulties known to schools	Jan2012	3.37	3.65	1.09		7.53
6 Children with profound and multiple learning difficulties known to schools	Jan2012	1.43	1.23	0.00		4.02
7 Children with learning difficulties known to schools	Jan2012	25.20	24.53	9.57		58.31

Source: www.improvinghealthandlives.org.uk

This estimates suggests that there most likely to be a level of under-identification of SEN children and particularly those on the autistic spectrum within Walsall.



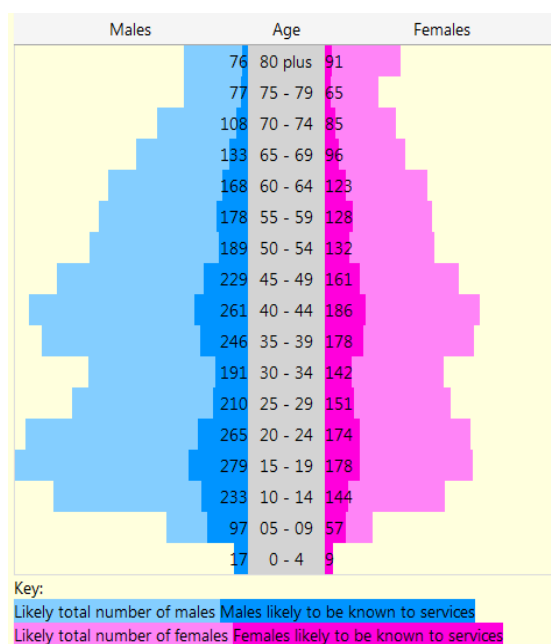


It is estimated that there are 1149 persons known to the services who have learning difficulties. However the true number of persons with learning difficulties in Walsall is more like 5057. The figure below illustrates the underestimation.

Source: www.improvinghealthandlives.org.uk

Impact on Eye Health

Low levels of literacy make it more difficult to communicate awareness of preventable sight loss and educate on healthy living. As many as a third of people with a learning disability also have sight loss. People with Down's syndrome are particularly likely to have eye problems. The prevalence of sight problems increases dramatically with the severity of the learning disability and with age. People with learning disabilities are 10 times more likely to have serious sight problems than other people.



People with severe or profound learning disabilities are most likely to have sight problems. 60% of people with learning disabilities need glasses and often need support to get used to them (RNIB Research 2011).

4.8 Economic Disadvantage

Walsall continues to suffer from severe economic hardship, with too few active businesses, low “new business” survival rates and high numbers of people who are economically inactive, suffer from ill health, together with job seekers who are poorly equipped to take up work opportunities.





Impact on Eye Health

Economic disadvantage means that many people may face sight loss which could be avoidable. Socio-economic deprivation is associated with severity of glaucoma at presentation, with patients from areas of higher socio-economic deprivation presenting with more advanced glaucoma (Ng *et al* 2010). Free NHS eye tests and help with the cost of glasses are available to people receiving certain benefits, and free examinations are on offer for children and the over 60s, yet expense of glasses still appears to dissuade many people from having their eyesight checked (McLaughlan B and Edwards A (2010))

4.9 Other Aspects

Low Birth Weight

Retinopathy of Prematurity (ROP) occurs when the retinal blood vessels do not develop normally in babies that are born prematurely. It can cause a serious loss of vision if not diagnosed and treated early. The reasons why babies develop ROP are complex, but ROP is more likely to occur in babies that:

- are born very prematurely - particularly less than 32 weeks gestation
- have a low birth weight of less than 1500 grams
- have needed oxygen treatment.

In the UK, over 60 percent of babies who have a birth weight of less than 1251 grams will have ROP. However, the majority of these babies (about 94%) will have mild ROP that does not require treatment.

Although the incidence of ROP is on the increase due to more premature babies surviving, our knowledge and understanding of the condition has also increased. There are only around six percent of





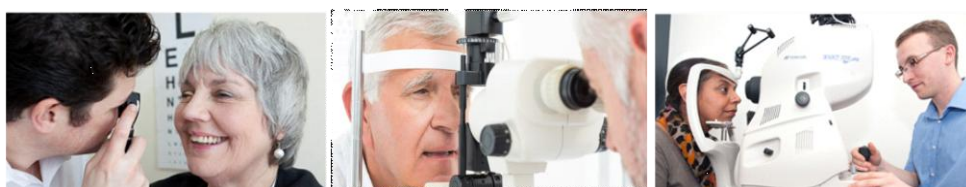
premature babies that will have advanced ROP requiring treatment.
(RNIB 2013)

Substance Abuse

Ocular sequelae from illicit drug use are varied and can be sight threatening, affecting visual acuity, visual perception, ocular posture or motility, the globe itself or its surroundings. Cocaine and crack cocaine probably have the highest number of ocular problems reported from their use, whilst Heroin and its cutting agents can cause permanent toxic lazy eye and visual impairment (Firth 2005)

Eye Health Workforce

Eye care is provided in the community mainly by optometrists, dispensing opticians and their staff and occasionally by ophthalmic medical practitioners. However some is also provided by General Medical Practitioners. Along with staff at the Manor Hospital and New Cross Hospital in secondary care, they form the workforce that provides ophthalmic services to Walsall residents.





5. Eye Health Workforce

5.1 Primary care practitioners:

Optometrists -also called ophthalmic opticians - examine eyes, test sight and prescribe spectacles or contact lenses for those who need them. They also fit spectacles or contact lenses, give advice on visual problems and detect any ocular disease or abnormality, referring the patient to a medical practitioner if necessary.

Optometrists may also share the care of patients who have chronic ophthalmic conditions with a medical practitioner. Once qualified, optometrists can undertake further training to specialise in certain eye treatment by therapeutic drugs. Some optometrists work in hospital eye departments. According to the General Optical Council (GOC) there were a total of 12,761 optometrists registered in the UK at the end of 2010 (rising from 12,414 in 2009). In the UK community optometrists are the gatekeepers of most referrals to the hospital eye service (HES) via the GP and for some conditions directly to HES (Pierscionek *et al* 2009, Davey *et al* 2011)

Ophthalmic Medical Practitioners (OMPs) are doctors who specialise in eye care. An OMP is “a registered medical practitioner” who has undertaken postgraduate training in ophthalmology. The responsibilities of OMPs in conducting NHS sight tests are the same as those of optometrists and both have an important role in the primary detection of eye disease.

Some OMPs also work in the Hospital Eye Service or as General Practitioners or in other health care settings.

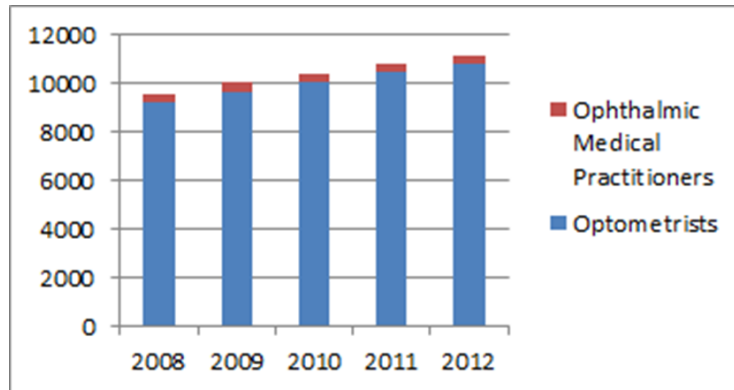
There were approximately 407 OMPs in the UK at 31 December 2010 (England 330, Wales 16, Scotland 41, N.Ireland 208) who conducted less than 1% of NHS sight tests during the year ending 31 March 2011





(England 0.3%, Wales 0.2%, Scotland 0.1%, N.Ireland 0.85%). OMPs are regulated by the General Medical Council

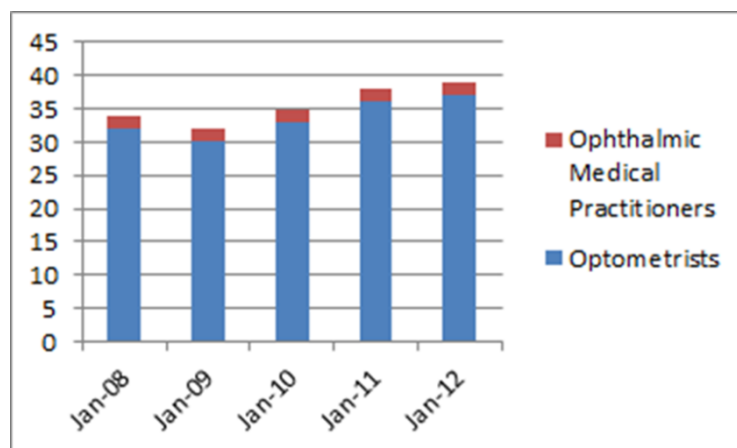
Ophthalmic practitioners in England as at 31 December each year



Source: HSCIC 2013

Optometrists are the major provider of GOS in England. The same is true for GOS providers in Walsall.

Ophthalmic practitioners in Walsall.

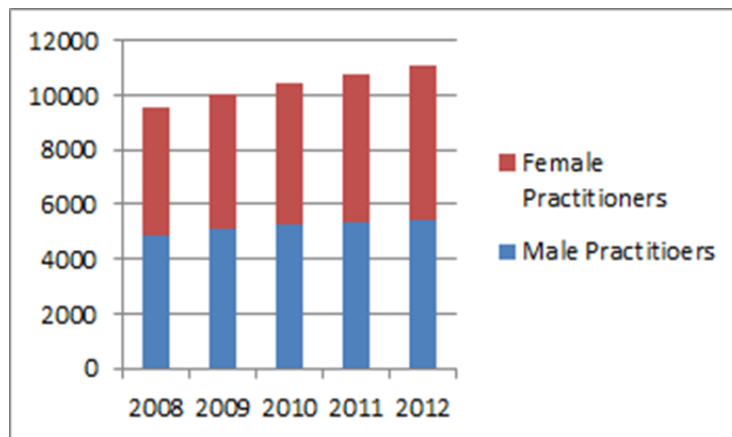


Source: HSCIC 2013





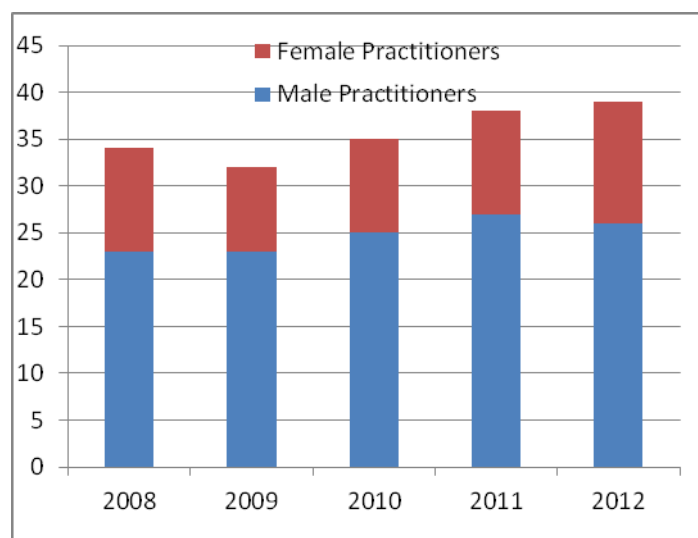
Gender of Optometrists in England as at 31 December each year



Source: HSCIC 2013

Just over half the optometric performers in England are female.

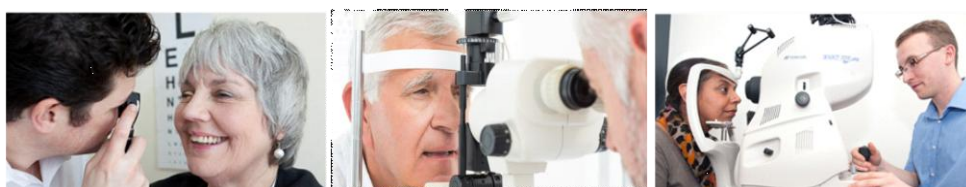
Gender of Optometrists in Walsall



Source: HSCIC 2013

Substantially more male practitioners than female optometric practitioners are performers in Walsall compared to the national average in the profession.

Dispensing opticians - advise on, fit and supply the most appropriate spectacles after taking account of each patient's visual, lifestyle and vocational needs. Dispensing opticians suitably trained may also play an





important role in advising and dispensing low vision aids to those who are partially sighted and in advising on and dispensing to children where appropriate. They are also able to fit and provide aftercare for contact lenses after undergoing further *specialist training*. On completion, practitioners are placed onto a *specialty* register. Career opportunities also exist to develop business skills in marketing and practice management. There were 5,821 dispensing opticians registered in the UK with the GOC at the end of 2010 (rising from 5,723 in 2009)

It would not be out of place to mention General Medical Practitioners (GPs) here as they do play a role, albeit not a major one, in assessing patients with minor ocular complaints. Without specialist equipment such as slit-lamps, tonometers, visual field analysers, and appropriate training, it is not surprising that they tend in general refer patients on to secondary care or initiate some intervention for minor external ocular lesions often on recommendations of optometrists. Around 2-4% of GP consultations have been found to be regarding patients with ocular symptoms (Sheldrick *et al* (1993)).

5.2 Secondary care practitioners:

Ophthalmologists are medical doctors who are licensed to practice medicine and surgery. An ophthalmologist diagnoses and treats all eye diseases, performs eye surgery, and may prescribe spectacles and contact lenses. The vast majority of secondary eye care takes place in eye clinics within hospitals, and is administered by ophthalmologists. The UK has the lowest ratio of consultant ophthalmologists per 100,000 of the general population in the EU (Amoaku *et al* 2012).

Orthoptists are non-medical staff trained to work mainly with ophthalmologists and work primarily with children and their eye





problems. In many eye hospital departments they also provide technical support in other areas including orthoptic led specialist services.

Ophthalmic Nurses are nurses trained in ophthalmic aspects of nursing and support ophthalmologists in hospital eye departments. These individuals in some hospital eye departments are able to deliver nurse led specialist services after appropriate further qualifications, and this role is rapidly growing.

Eye Clinic Liaison Officers (ECLOs) are individuals who provide practical and emotional support and advice to patients in hospital eye departments

5.3 General Ophthalmic Services – Primary Care

Primary eye care in the main is made available to Walsall citizens as a result of General Ophthalmic Services contracts within the framework created by the National Health Service Act 2006. The framework comprises three levels of service contracts with NHS England, which are referred to as mandatory, additional and enhanced.

Mandatory services are the sight testing service when carried out at a practice. NHS England provides this service to Walsall citizens by contracting local optometrists who provide NHS funded sight tests from a practice in Walsall.

Additional services - the only additional service that has been prescribed in the regulations is mobile services i.e. provision of NHS funded sight tests at day centres, residential care homes and individuals' own homes known as domiciliary services. However, whilst some



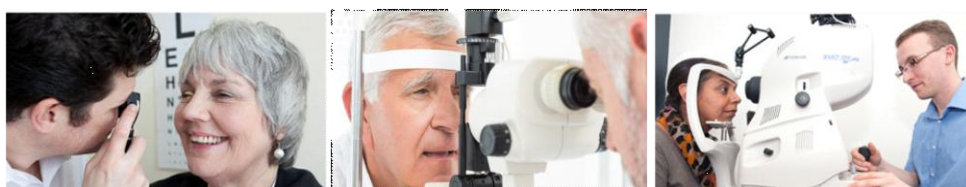


providers of additional services may also be providers of mandatory services, this is not a requirement. It is entirely in order to be a provider of additional services without being a provider of mandatory services (and vice versa).

Enhanced services are any other primary ophthalmic services commissioned at the discretion of Walsall CCG to meet what they consider to be necessary primary ophthalmic services in Walsall. There are currently no enhanced ophthalmic services contracted by Walsall CCG.

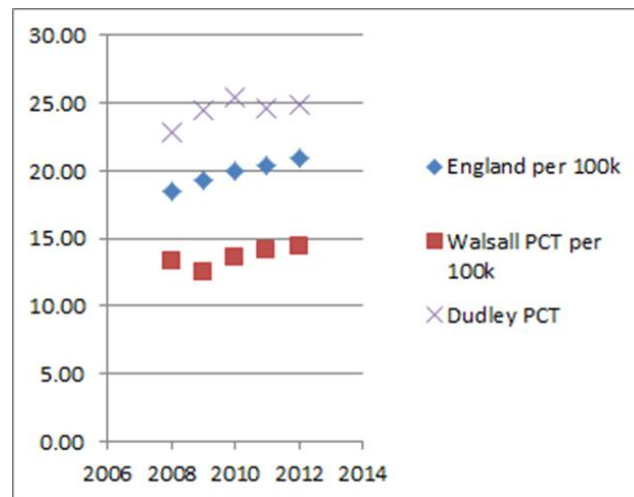
In August 2008 the contractual framework underpinning Mandatory and Additional Services was substantially amended and improved. The Terms of Service regime which had historically formed the basis of Mandatory and Additional services was abolished and was replaced by individual contracts for each contractor with NHS England. The Performers List Regulations were also amended to allow for the introduction of an Ophthalmic Performers List and lay contractors were allowed to provide General Ophthalmic Services (GOS) for the first time, subject to certain safeguards.

Performer – an individual optometrist or ophthalmic medical practitioner who undertakes GOS sight tests for a contractor (or may himself be a contractor). In order to perform NHS funded sight tests a clinician must be on the National Ophthalmic Performers List and is allocated to an Area Team within NHS England based on the postcode of the individual's clinical practice location or the postcode registered with their regulator. On the basis of being on the National Ophthalmic Performers List the clinician may carry out NHS funded sight tests in any part of England. (NB Separate arrangements apply in Scotland, Wales and N.I.)





Optometrists per 100k population

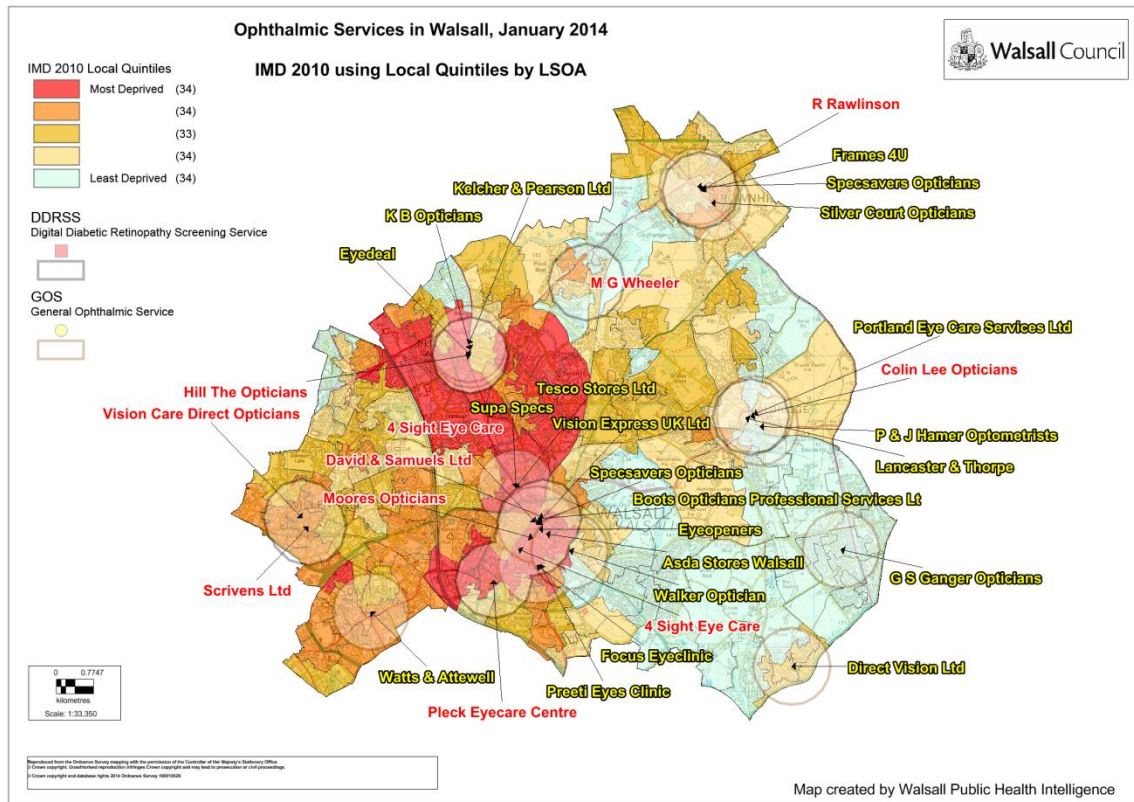


Source: HSCIC 2013

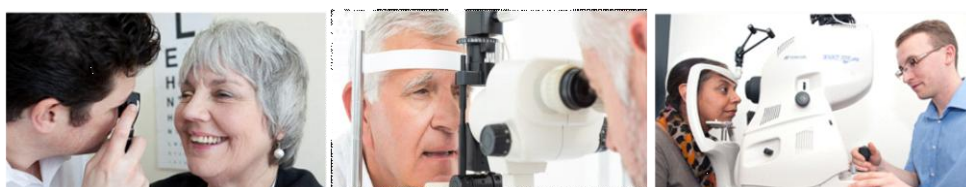
There are fewer practitioners per 100k population in Walsall compared to the National picture and substantially lower than a neighbouring statistically equivalent PCT.

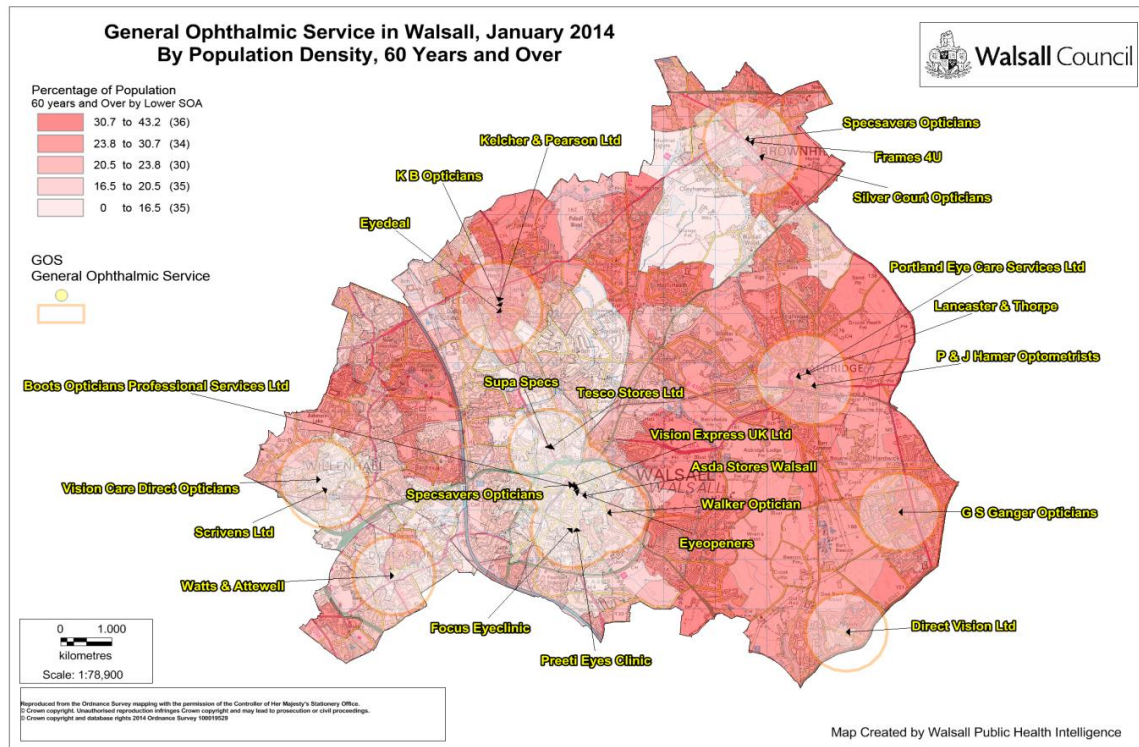
Contractor – an individual or business that has entered into a contract to provide NHS funded sight tests which account for about 70% of all sight tests conducted in England (FODO 2013). A contract may be held by any suitable person – in this context “person” includes a company. A provider must hold a contract in each area where they provide NHS funded services. There are 32 contractors providing Mandatory sight testing services and 25 contractors providing Additional services in Walsall.





Plotting the location of the contractors' practices, it is apparent that more practices located in Walsall would be of benefit. The circles indicate a 15 minute walking radius to the optometric practice.





The figure above illustrates the poor coverage of sight-testing services for older people since a substantial number of the population live further than the 800m attenuation threshold found by Simmons (2009). Clearly not enough practices are located in the East of the Borough outside the inner ring road where the majority of the older population live and considerable areas are not within 15 minutes walking distance to the optometric practice (800 m denoted by the circles).

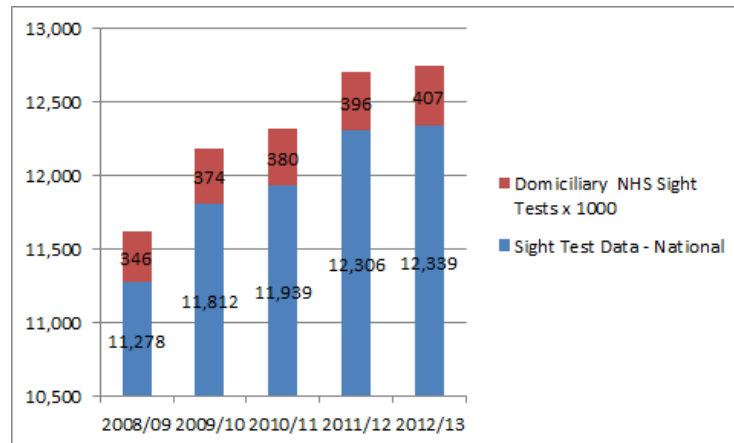




5.4 Ophthalmic Activity in Primary Care

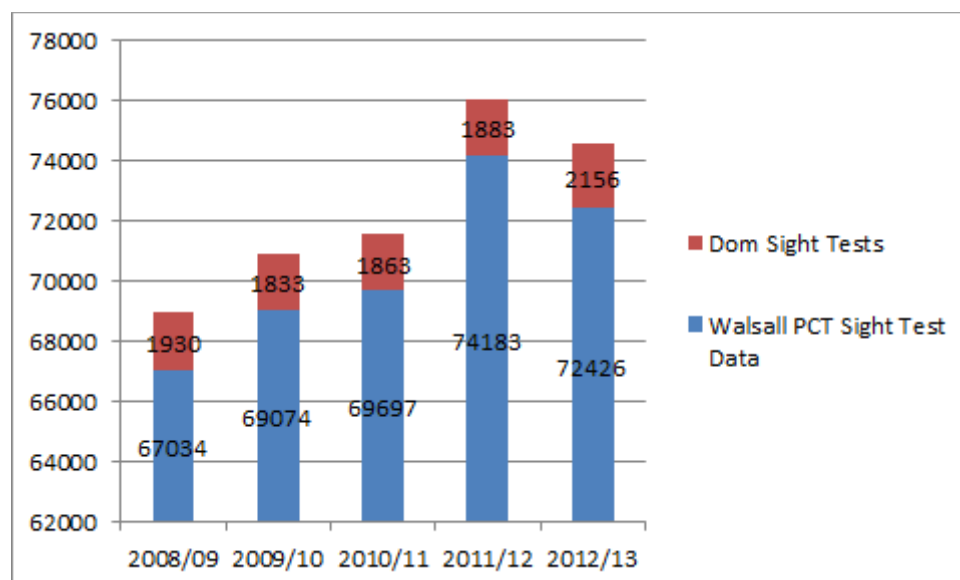
Only sight testing data is considered: Data National (England) GOS

Sight Tests



Source: HSCIC 2013

There is a steady increase over the past 5 years by 9% for total NHS sight tests and 17% for Domiciliary NHS sight tests which account for about 3% of the total sight tests done under the NHS in England. This may partly be explained by the greater incentive now provided on fees claimable from the NHS for domiciliary services which has led to specialist domiciliary firms emerging to provide this service.



Data on Walsall GOS ST - Mandatory and Domiciliary

Source: HSCIC 2013



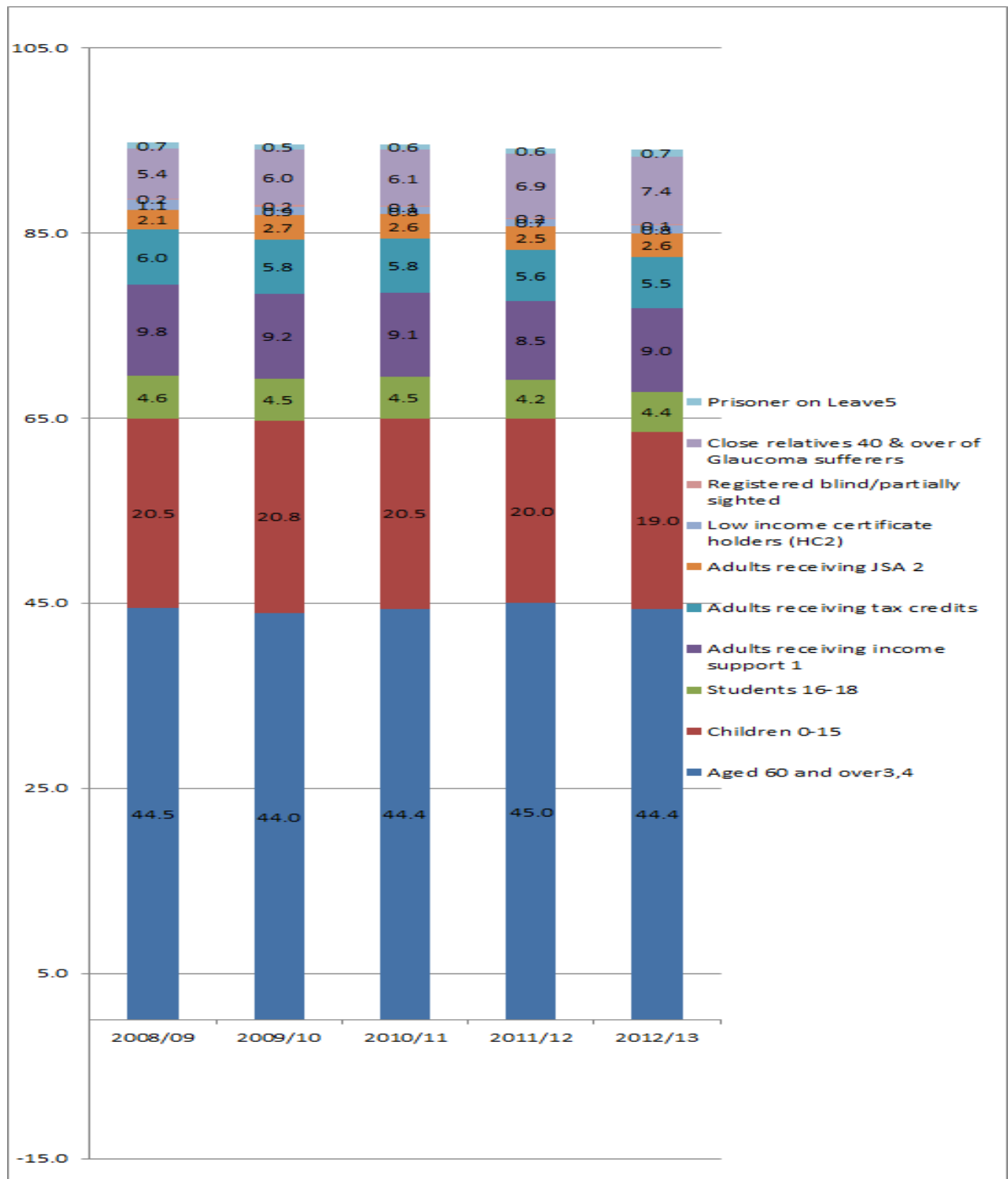


An increase over the past 5 years of total sight tests conducted of 8% (marginally below the National average for the same period) with a peak in 2011/12 when some promotional activity was undertaken by NHS Walsall's then Communication Department. There is an increase of 11.7% in domiciliary tests which is significantly below the national average over the last five years. Domiciliary sight tests account for about 2.9% of the total number of sight tests under the NHS.



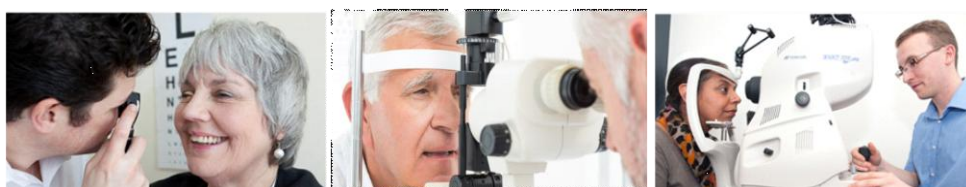


GOS sight test eligible groups nationally



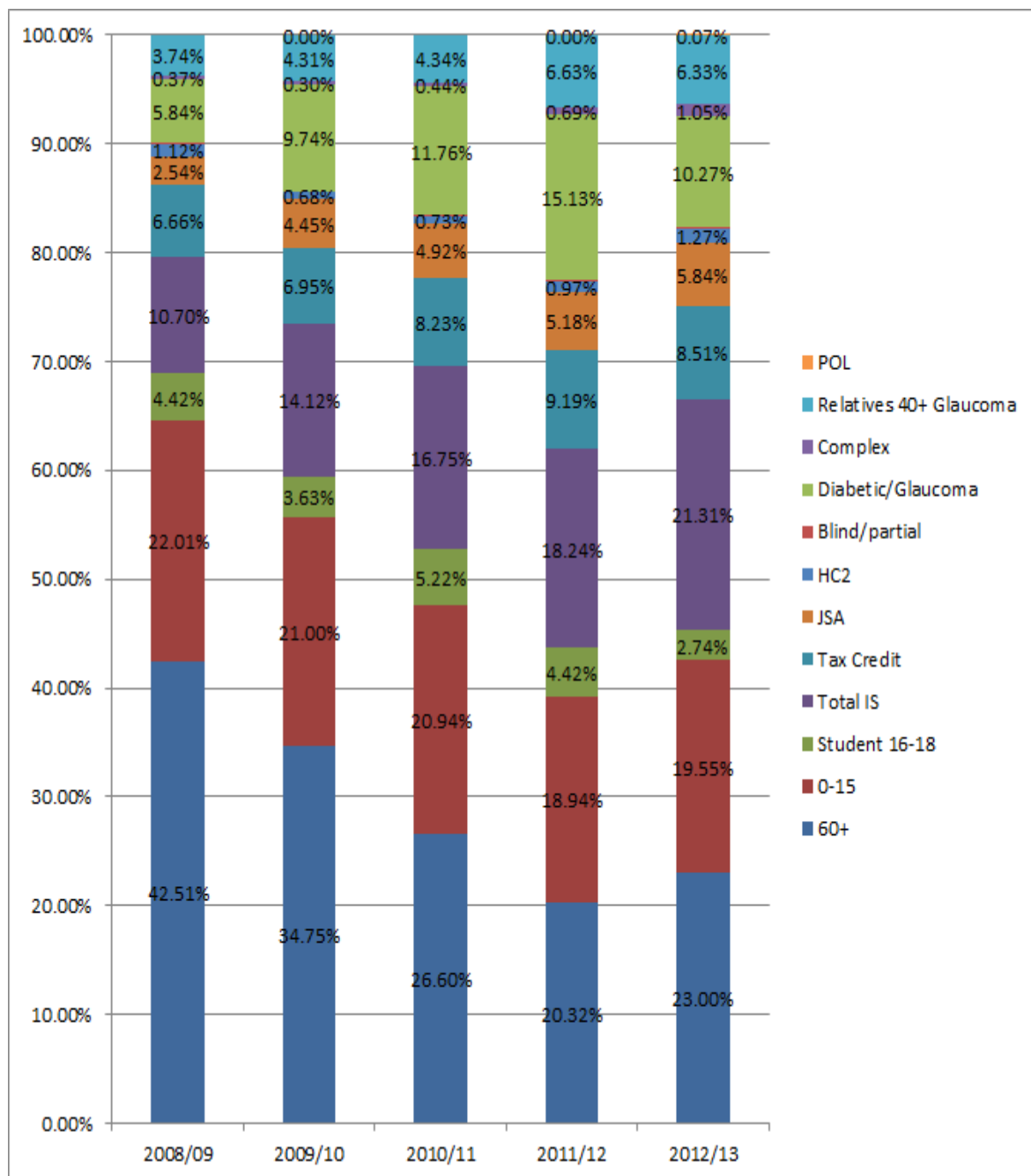
Source: HSCIC 2013

Nationally the over 60s account for about 44% of the total sight tests whilst children account for about 20%. This is a fairly steady figure over the past 5 years.





GOS sight test eligible groups for Walsall



Source: HSCIC 2013

There is a substantial decrease in the over 60s taking up their NHS sight tests in Walsall and an small increase in uptake by patients on Income Support and by Diabetics. There is also a slight reduction in uptake by children. Because the eligibility of NHS tests results on only one factor being recorded on the GOS form, it is possible that over 60s patients in the past may have been recorded as eligible for an NHS sight test under





another category. This may explain some shifting but the change over the past 5 years is too substantial to be explained simply as a re-categorisation issue. This data is confounded by the possibility that some over 60s may have attended for sight tests outside the borough. The lower take up of sight tests among older people is a major short-coming of present arrangements aimed at meeting needs of Walsall residents.

There are a number of identifiable barriers to accessing regular eye tests by the general population. These include:

- lack of knowledge of the entitlement;
- failure to recognise the importance of regular eye tests for combating eye disease;
- transport restrictions;
- concerns about the cost of glasses/prescription; fear of complications; and
- cost of the eye test for those who do not receive free eye care services

The BME population has additional barriers. These include:

- a tendency to be more remote from statutory services and less well connected to mainstream service providers (Johnson and Morjaria- Keval, 2007).
- language needs such as interpretation, translation and information in community languages.

A survey of 5,000 people aged 60 and over carried out by Age Concern Research on behalf of RNIB (2007) showed that almost half of the population in this age group (47 per cent) had not had annual eye tests.

The survey highlighted three key barriers to eye tests:

- lack of own eye health awareness





- the cost of glasses
- transport problems

More recently Hirji and Marsden (2012) found that in Dudley older patients were reluctant to attend eye exams because of:

- a tacit acceptance that sight failure was a part of growing old
- poor understanding of the range of conditions that could be discovered from the sight test
- the cost of spectacles

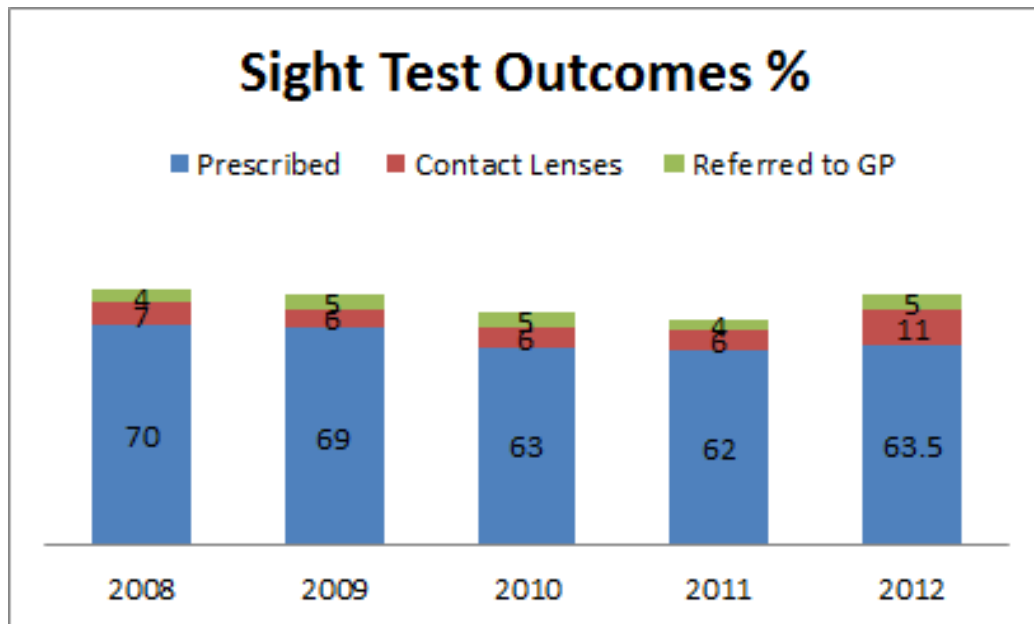
Simmons (2009) has shown in Tower Hamlets, that distance from sight the test provider has a direct impact on uptake attenuating attendance for sight tests as follows:

For Under 16s: an attenuation of attendance at an average annualised rate of 6.6% per km. For those aged 16-59: 9% an attenuation of attendance at an average annualised rate of 6.7% per km. For those aged 60+: an attenuation of attendance at an average annualised rate of 25% per km. This attenuation is particularly steep after 0.8kms, or roughly equivalent to 15 minutes walking time suggesting that sight test centres should be located a maximum of 15 minutes from any residential property/catchment area notwithstanding public transportation and other access issues.

5.5 Outcomes of GOS sight tests

There is currently no data on this aspect collected by the NHS via the submission of GOS sight test claims. There is however an indirect estimate based on survey of its members by the Federation of Ophthalmic and Dispensing Opticians (FODO). FODO represent eye care providers and registered opticians in business in the UK and Republic of Ireland and account for about two thirds of eye examinations in the UK.





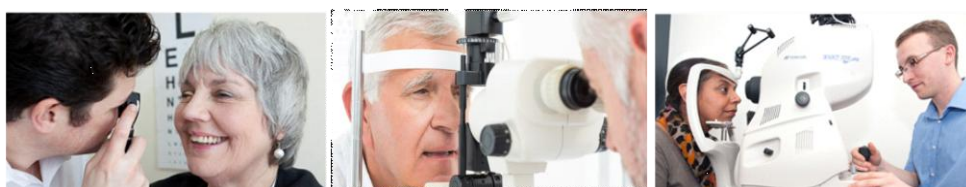
Source: Optics at a Glance 2008-1012 at www.fodo.com

Some two thirds of the attendees for sight tests have a spectacle prescription issued which may or may not be a change from any previous spectacle prescription but this is not differentiated in the data above. There has been a significant increase in referrals to contact lenses nationally attributable in part to the extensive marketing activity.

In an attempt to understand the accuracy, quality, type and outcome of referrals to the hospital eye service (HES) in Walsall from primary care to secondary care in Walsall an audit of 1000 referrals is detailed in section 6.71.

5.6 Hospital Eye Services – Secondary Care

There were 1.65 million first attendances at English NHS ophthalmology departments in 2012-13 representing 26% of the total of 6.41 million ophthalmology attendances. (www.HSIC.co.uk) There has been a steady rise of in ophthalmology outpatients over the years and ophthalmology outpatients constitute 11% of all NHS outpatient





appointment. There appears to be a lack of capacity in secondary care and a limited ophthalmology budget. Increased testing for glaucoma and better, although more expensive, treatments for medical retina conditions such as age-related macular degeneration and diabetic retinopathy are outstripping the current budgets for eye care (Hornby 2013).

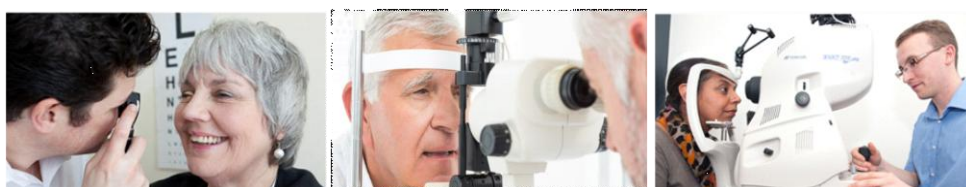
The Royal Wolverhampton NHS Trust under an agreement with Walsall Healthcare NHS Trust provides ophthalmology services to Walsall residents. This is delivered at two locations namely New Cross Hospital in Wolverhampton and Manor Hospital in Walsall.

Ophthalmology services bought from Royal Wolverhampton NHS Trust for the Manor Hospital include:

- Medical Staff
- All nursing staff (including pre-assessment)
- Optometrists

New Cross Hospital Wolverhampton

Located at Wolverhampton Road, Wolverhampton, WV10 0QP, this hospital provides a comprehensive outpatients and accident & emergency ophthalmology services when required to Walsall residents. In particular it provides clinics for the treatment of macular lesions (fast track for wet AMD), facilities to treat complex glaucoma cases and vitreo-retinal cases. It is quite normal for patients seen at New Cross Hospital to be subsequently seen at the Manor Hospital for follow up, and vice versa. This makes it particularly difficult to track the services provided to Walsall residents quickly since, in the absence of electronic clinical records for patients there is no cost effective method of determining the actual numbers per annum of Walsall residents





attending for Age Related Macular Disease, Glaucoma, or Cataract care at the hospital

The Manor Hospital

Located at Moat Road, Walsall, WS2 9PS, the Manor Hospital provides the full range of services normally expected from a District General Hospital. This includes an ophthalmology service under agreement with the Royal Wolverhampton NHS Trust. This effectively means that the staff employed by the Royal Wolverhampton NHS Trust provide the ophthalmology service at the Manor Hospital. The service does not however include any accident and emergency cover, which is provided at New Cross Hospital, but includes the following:

- Cataract
- Glaucoma
- Diabetic Retinopathy
- Ocular Motility*
- Retinopathy of prematurity (ROP) screening*
- Minor Ops
- Laser treatment
- Low Vision Services

* These services are led by Orthoptists (in-house staff)

In the absence of electronic clinical records for patients there is no cost effective method of determining the actual numbers per annum of Walsall residents attending for any of the above clinics.

The ophthalmology services at both the Manor and New Cross Hospitals are under pressure exacerbated by new and emerging treatments in ophthalmology. This has an impact on budgets often struck before the advent of new and emerging treatments, with a constantly evolving knowledge of the future application of treatments of lesions amenable to





these new interventions. Nationally, half of all hospitals are unable to treat people with AMD within recommended waiting times, and 80% of clinics fail to see patients within the recommended follow up period (Macular Society 2013). It is therefore not surprising that waiting lists are stretching everywhere, especially for follow-ups where perhaps the clinical need and urgency to review patient's progress is not factored in by administrators. Speed of access to diagnosis and treatment with many of the new treatments is essential to save sight. Pressures at eye departments in the NHS are such that the Royal College of Ophthalmologists recently gave its support to the idea that non-medical health professionals could administer anti-vaso-endothelial growth factor (VEGF) injections instead of this being the exclusive preserve of ophthalmologists. Driven primarily by the explosion of demand for anti-VEGF therapies, this change in thinking is one of a number of approaches, including consultant led but not consultant delivered clinics, that eye departments will have to adopt, to meet future demands. This will mean more development needs and opportunities for optometrists, nurses, orthoptists and other support staff at hospital eye departments.

	2009/2010		2010/2011		2011/2012		2012/2013	
	Spells	Cost	Spells	Cost	Spells	Cost	Spells	Cost
Cataract	1540	£1,213,734.37	1781	£1,382,192.44	1551	£1,250,021.17	1589	£1,208,080.00
Degeneration of macula and posterior pole	32	£18,542.97	80	£70,812.52	105	£76,026.99	131	£83,530.00
Diabetic retinopathy	0	£0.00	0	£0.00	0	£0.00	7	£3,667.00
Glaucoma	71	£55,906.96	71	£65,285.58	68	£61,465.46	77	£71,748.00
Strabismus and amblyopia	53	£48,866.61	52	£53,565.91	53	£52,201.45	64	£64,279.00
Grand Total	1696	£1,337,050.90	1984	£1,571,856.45	1777	£1,439,715.07	1868	£1,431,304.00

Elective and Day Case Inpatient Spells for Walsall Commissioned Patients at All Providers

Source: NHS Walsall Clinical Commissioning Group

The table above suggests that in-patient cataract interventions are reducing whilst other in-patient interventions especially for wet AMD are





escalating. RNIB's research has shown that around 60% of healthcare commissioners have set limits to restrict cataract surgery, which means in practice that people have to live with sight loss for longer and could partly explain the slightly reducing cost to Walsall CCG for the services provided by the Manor Hospital. However this has yet to be verified. Restrictive referral criteria are also reflected in a national decline in the number of second eye cataract operations in 2011/12, and significant variation in treatment times (RNIB 2013).

	2009/2010		2010/2011		2011/2012		2012/2013	
Treatment Function	Attendances	Cost	Attendances	Cost	Attendances	Cost	Attendances	Cost
130 - Ophthalmology	26651	£1,985,075.41	30338	£2,923,812.55	30108	£2,722,189.00	29894	£2,733,694.45
216 - Paediatric Ophthalmology	428	£39,496.20	512	£53,165.30	519	£66,714.04	602	£71,636.00
460 - Medical Ophthalmology	1991	£134,552.72	1382	£92,625.33	1243	£83,041.82	1139	£75,858.84
Grand Total	29070	£2,159,124.33	32232	£3,069,603.18	31870	£2,871,944.85	31635	£2,881,189.29

Outpatient's attendances and procedures for Walsall

Commissioned Patients at All Providers

Source: NHS Walsall Clinical Commissioning Group

For outpatients, two of the three broad categories of consultations are on the increase, whilst the medical ophthalmology category appears to have declining attendances. This category includes all non-surgical interventions and may reflect reducing follow-ups and lengthening waiting times. This data is confounded by the fact that there may have been a change of coding or even a change of personnel and thus availability of the skills to conduct the consultations/medical interventions

All Spells

	2009/2010		2010/2011		2011/2012		2012/2013	
	Spells	Cost	Spells	Cost	Spells	Cost	Spells	Cost
Grand Total	2083	£1,650,096.00	2381	£1,946,014.28	2232	£1,871,950.00	2323	£1,814,097.00

Source: NHS Walsall Clinical Commissioning Group





Overall there appears to be a “flattening out” of the ophthalmology spend possibly due to rationing of surgery, and stretched waiting lists for follow-ups which is against the grain of what should be happening bearing in mind the demographics of Walsall.

An orthoptic led school vision screening service to local schools in Walsall is also provided. Over 88% of patient admissions at the Manor are from the Walsall although patients from other areas are also treated here.

Examining the attendances at ophthalmology outpatients in England for 2012-13, the following are the most frequent reasons recorded by Hospital Episode Statistics in that year:

Primary Diagnosis Code	Primary Diagnosis Code Description	All attendances	Attended first appointment	Attended first tele consultation	Attended subsequent appointment	Attended subsequent tele consultation	Attended but first / subsequent / tele unknown
H40.9	Glaucoma, unspecified	28,959	2,772	1	26,164	22	-
H40.0	Glaucoma suspect	22,722	2,476	1	20,073	172	-
H57.9	Disorder of eye and adnexa, unspecified	20,377	4,288	12	16,059	18	-
H35.3	Degeneration of macula and posterior pole	19,361	1,268	-	18,072	21	-
H26.9	Cataract, unspecified	17,206	5,112	3	9,653	2,438	-
H35.9	Retinal disorder, unspecified	10,791	3,251	-	7,533	7	-
H40.1	Primary open-angle glaucoma	5,862	246	-	5,470	146	-
H36.0	Diabetic retinopathy	5,372	932	-	4,438	2	-
H18.9	Disorder of cornea, unspecified	3,465	958	-	2,506	1	-
H02.9	Disorder of eyelid, unspecified	3,163	1,148	1	2,002	12	-
H35.8	Other specified retinal disorders	2,151	127	-	2,024	-	-
H04.1	Other disorders of lacrimal gland	1,346	144	-	1,196	6	-
H36.8	Other retinal disorders in diseases classified elsewhere	1,271	438	1	831	1	-
H26.4	After-cataract	1,152	205	-	938	9	-

It would not be unreasonable to suggest that the likely profile of outpatient’s attendances at the Walsall Manor may well reflect a similar profile but one cannot be sure without further work on this.





- **Sight Loss, it's Prevalence, Detection and Treatment**

Around two million people in the UK are living with some degree of sight loss.(RNIB 2013) Sight loss affects people of all ages, but the prevalence of sight loss increases with age.(Action for Blind website). One in five people aged 75 years and over are living with sight loss. There is also growing incidence of underlying causes of sight loss such as obesity and diabetes.

The most common causes of sight loss in adults are:

- Refractive Errors - an error in the focussing of light by the eye to a sharp focus precisely on the retina, resulting in a blurred retinal image
- Cataract - a loss of clarity the eye's normally clear lens, causing difficulties in seeing clearly
- Age-Related Macular Disease (AMD) – a deterioration of part of the back of the eye responsible for the sharp, central vision needed to see detail e.g. reading (the macula)
- Glaucoma - a group of eye diseases often associated with abnormal internal eye pressure, leading to damage of the optic nerve at the back of the eye and consequently sight loss
- Diabetic Retinopathy – abnormal and/or damaged blood vessels at the back of the eye (retina) caused by changing blood sugar levels

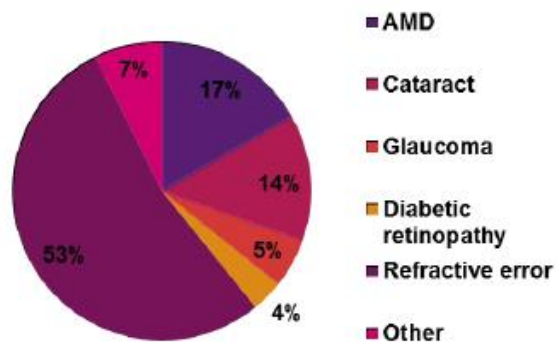
Squints, amblyopia (lazy eye) and inherited eye diseases: this category includes many of the conditions affecting children and young people. Save for squints and lazy eyes, the other inherited defects lead to progressive sight loss. The three most common causes of severe visual impairment and blindness in children are cerebral visual impairment,



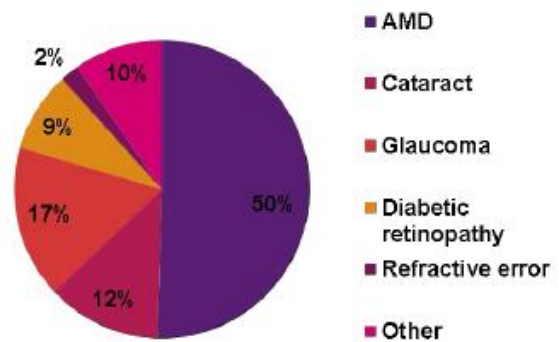


disorders of the optic nerve, and disorders of the retina (Rahi and Cable 2003). These diseases fall into the category of unavoidable loss of sight in children.

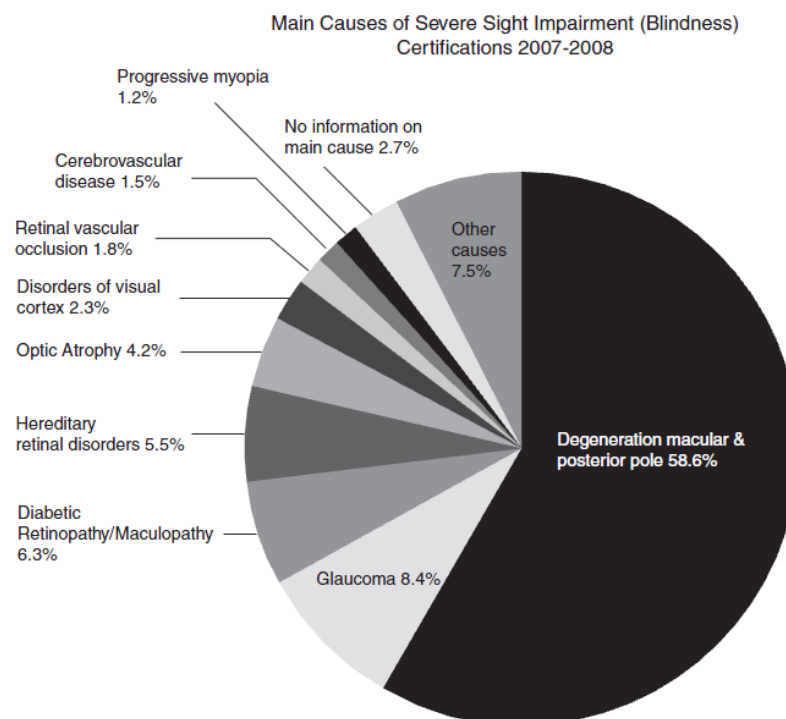
Causes of sight loss



Causes of Blindness



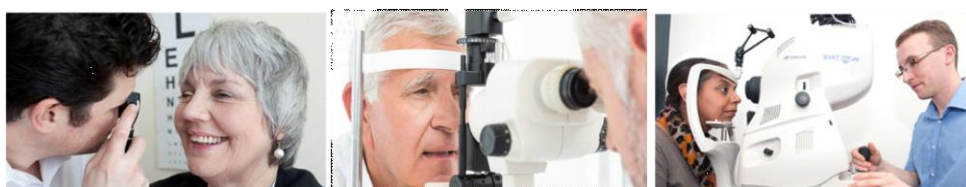
Source: RNIB (2013) *Sight Loss UK 2013*.



Main causes of severe sight impairment (blindness) in England and Wales: certifications April 2007–March 2008.

Source: Bunce *et al* (2010)

Over 50% of the sight loss among the two million people in the UK is avoidable. This figure includes the number of people whose sight could





be improved through refractive correction by wearing correctly-prescribed spectacles (53.3%), or with the right treatment interventions. It takes into account sight loss that could be avoided by timely treatment of cataracts (13.7%), glaucoma (5.3%), diabetic retinopathy (3.5%) and certain types of age-related macular degeneration (16.7%), following early diagnosis.

Unavoidable sight loss refers to conditions that are not treatable with current medical interventions – e.g. inherited genetic causes of sight loss.

In quantifying how much of a particular condition disease or lesion/condition there is in a population, different measures are used. They include:

Prevalence which is a measure of the number of people with a disease/condition at a particular time in relation to the total number of people in the population. This is typically expressed in terms of a proportion (usually %) and sometimes described as a prevalence rate. A prevalence measure requires a time reference which relates to the point at which the estimates are made, e.g. over a few days or months or annually.

Incidence is a measure that describes the number of new cases of the disease/lesion/condition that occur over a specified time period in people who were disease/condition free at the start of the period.

Numbers of people in a population with the disease/condition at a particular time point are estimated by applying prevalence rates, which are usually obtained from surveys, to national population estimates





6. Sight loss, its prevalence, detection and treatment

6.1 Refractive Errors

These can be present with or without coexisting eye disease and can be resolved with spectacles. 17% of visual impairment in the over 65s (Reidy A, *et al.* 1998), and 30% in over 75s (Evans *et al* 2002) was found to be due to uncorrected refractive errors. 73% of the over 65s in one study (Reidy A *et al* 1998) had not visited an optometrist within the past 12 months despite their visual impairment.. The Memorandum of understanding between the Department of Health and the optometric profession, recommends that those with low-risk aged 16 to 70 should have an eye test every two years, and those over 70 years should have an annual eye test. However, it is accepted that those with a family history of glaucoma who are aged 40 years and over and diabetic patients should have an eye test every year in addition to those patients who have a clinical need to be examined more frequently. The RNIB recommends an annual eye exam for all over 60 years which under the current NHS eligibility rules, would be paid for by the NHS only if clinically necessary.

Frequency of Eye Exams

Age Group	More than once a year	Once a year	Once every two years	Less than once every two years
	%	%	%	%
60-69	5	35	47	12
70-79	9	54	28	10
80-89	12	55	23	11
90+	21	55	21	3
Total	8	45	35	11

Source: RNIB, 2007

There is clearly a shortfall of the uptake of annual eye exams in the elderly population according to the data in Table generated by RNIB in





2007. This shortfall is very noticeable in the last five years for GOS sight tests in Walsall (see **Section 5.2**) Access Economics (2009) predicts that if people with uncorrected refractive errors are left unaddressed, their numbers will rise by 25% each decade.

6.2 Cataracts

A cataract is the name given to any light scattering reduction in transparency in the lens, but not necessarily having a demonstrable effect on vision. Cataracts may be classified in a number of ways including by their morphology/anatomy, their cause or their age of onset

The prevalence of cataract increases with age (Frost *et al* 2001).

Smoking has been implicated in increased prevalence of cataracts (Kelly *et al* 2005) as has increased UV exposure such as may be found in frequent sunbed use or foreign travel (Klein *et al* 2002). The Blue Mountain and Beaver Dam eye studies also noted increased cataract prevalence amongst patients with diabetes. Development of certain types of cataracts is linked to steroid use (Klein *et al* 2002).

Cataract prevalence as determined by NEHEM is an estimate of “surgical” cataract. A surgical cataract is a cataract that is also causing patient symptoms and therefore extraction is more likely to be beneficial. The prevalence of non-symptomatic cataract is likely to be higher but not necessarily of interest as treatment is not indicated.

The NEHEM provides a high and a low estimate of cataract prevalence as the estimates in the studies consulted were very broad. The high estimate is based on an Australian study where they have a higher ambient ultraviolet light that is more likely to lead to increased cataract





formation. The low estimate is based on a study conducted in London and is more likely to be representative of Walsall's population.

	High estimate (Australian data)	Low Estimate (UK data)
Walsall	6.71%	1.8%

Prevalence of surgical cataract using NEHEM population estimates

RNIB estimates that there are 2,460 people living with cataracts in Walsall. Because cataracts cause gradual vision loss, many patients live with their visual impairment. More than 88% of these in one study had no contact with an eye care professional (Reidy *et al* 1998).

Furthermore, Asians have a greater risk of developing cataracts compared to the black population and white population (Kempen *et al* 2004; Das *et al* 1994). Busbee and colleagues (2002) performed a cost utility analysis of initial cataract surgery and reported a cost per quality-adjusted life- year (QALY) gain of \$2020, concluding that cataract surgery appeared to be highly cost-effective. This same research group also investigated the cost effectiveness of cataract surgery in the second eye (\$2727 per QALY gained) and found this procedure to be similarly cost-effective. Similar cost-effective results were also noted in a Swedish population (cost per QALY gained of 45000 SKr (US\$4500) (Kobelt 2002). The cost- effectiveness of cataract surgery has also been evaluated in disability adjusted life-year (DALY) terms, demonstrating that it is highly cost- effective when compared to other preventive programmes (Marseille 1996). The cost per DALY (a measurement





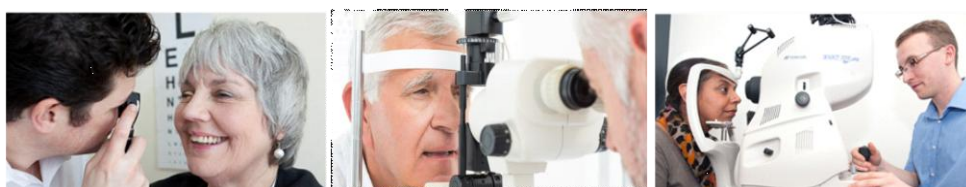
derived by the World Bank) indicated between \$15 and \$32 per DALY saved in the USA, placing it as one of the most cost-effective public health interventions

Walsall currently has a paper based direct cataract referral scheme which employs a “choose and book” approach for which the optometrist is paid a fee.

The current involvement of the primary care optometrist is to conduct a routine sight test and following this to:

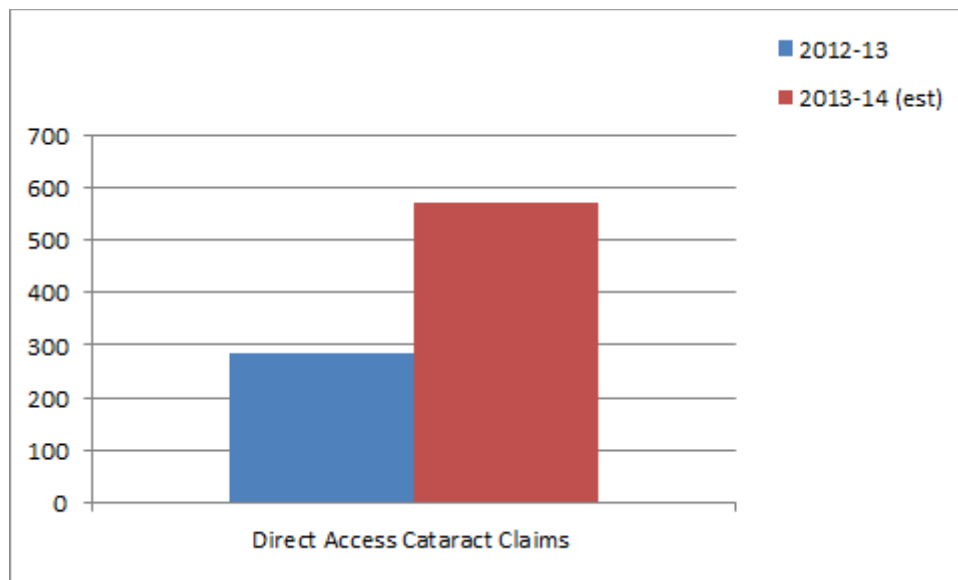
- Discuss risks and benefits of surgery (provide patient information leaflet and consent information)
- Discuss patient lifestyle
- Ensure patient wishes to proceed with surgery
- Offer choice of provider
- Complete bespoke cataract referral form, including refraction, and send to hospital eye service with a copy to the patient, GP and CCG

The community optometrist is not then involved until the patient is discharged from the HES after surgery. There is no post-cataract-operation follow-up by the primary care optometrist. Follow-up visits are conducted entirely by consultants and support staff within the HES. Only when discharged from the HES are post-cataract patients reviewed by a community optometrist for an update of their refractive status and optical correction as appropriate. This normally means that the patient attends for a first follow-up appointment after the operation at the hospital with the ophthalmologist, and then at least one further appointment at the HES before being discharged. Cataract referral pathways such as these have been found to significantly improve the number of patients who





have surgery on referral to secondary care by filtering out patients who do not wish to have surgery in advance (Lash *et al* 2006).



Based on Direct Referral Cataract Claims by optometrists, Walsall will have a substantial increase in cataract referrals to the Hospital Eye Service. This trend is likely to rise due to the ageing population of Walsall. However, feedback from the the Manor Hospital, Walsall suggests that only about 50% of those referred go ahead with the surgical intervention which suggests that perhaps the local direct referral scheme is not as effective as one would hope.(Bhatnagar 2014) and needs to be reviewed. However a recent audit of 30 direct “Disorder of the Lens” referrals from primary care optometrists to Walsall Eye Hospital (Fung, M *et al* 2014) resulted in 21 patients being listed for cataract surgery, 3 declined surgery, 3 were deemed unsuitable due to comorbidity of conditions and in 4 cases required other ophthalmological interventions (e.g. required YAG capsulotomy). Admittedly a small sample, it does not corroborate the concerns expressed regarding poor “conversion” to surgery.

Primary diagnosis for the majority of admissions nationally into eye hospitals in 2012-13 was for disorders of the lens including cataracts.





The vast majority of these were day cases (98.7%). Currently the Manor Hospital Walsall can accommodate up to 1000 cataract procedures per annum (Bhatnager, A 2014).

The National Ophthalmology Database (NOD) in their data set shows an exponential rise over the years. One can extrapolate an average of 23.74% increase per NHS year based on the rise over the past 5 years from this data accumulated from 35 centres in the UK. This is a very successful procedure with less than 2% of cases being reported as having complications by the Royal College of Ophthalmologists.

The major complication of cataract surgery - posterior capsule rupture - is much reduced in the hands of experienced surgeons as depicted in the NOD data.

There is clearly a need to improve access to cataract surgery.

Development strategies for cataract services should include encouraging take up of this procedure..

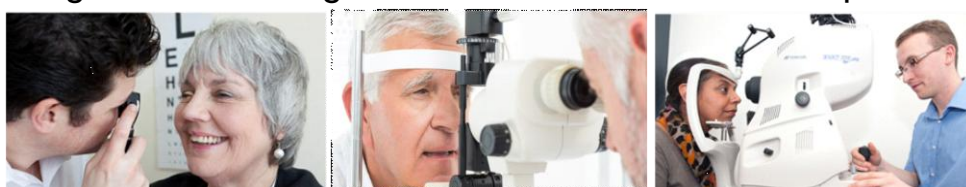
In addition, intervention strategies to reduce smoking could be helpful in reducing the incidence and progression of cataract.

Access Economics (2009) predicts that the incidence of cataracts will rise by 10% per decade.

6.3 Age related macular degeneration (AMD)

Age related macular degeneration (AMD) is the leading cause of certifiable visual loss in the UK. 52.9 % of the certifications for blind (SSI) and partial sight(SI) in 2010-11 were attributed to this cause (Bunce *et al* 2010).

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”.

In dry AMD ageing causes the development of “drusen”, which are yellow proteinaceous deposits in the retina. These deposits disrupt retinal cells leading to breakdown in function and gradual loss of central vision. There is no suitable treatment currently for dry AMD at present.

In wet AMD, the ageing changes in the macular area of the retina promote the development of new blood vessels (neovascularisation). These blood vessels are more fragile and prone to rupture leading to leakage of blood and its fluid components into the retina causing severe loss of central vision often accompanied by distortion. Excessive fluid may lead to localised detachment of the retina. When the fluid subsides, a scar usually remains. Vision loss is much more rapid than in the dry type. A protein (Vaso-Endothelial Growth Factor (VEGF)) has been found to be implicated in the growth of the new vessels. NICE has confirmed that in some cases treatment by injection with an anti VEGF agents can reduce loss of vision (NICE 2008). This now means that there is effective treatment for wet AMD where in the past there was none. The prevalence of AMD increases with age (NICE 2008).

The onset of AMD has been associated with oxidative stress. Along with smoking, obesity, poor diet and chronic hypertension, have been shown to increase oxidative stress and hence also the risk of AMD (Hogg 2012; Rughani 2012). Smokers are four times more likely to develop AMD than non-smokers (Tan *et al* 2007).





Local prevalence

Walsall	Total AMD	NV AMD (wet)	Geographic (Severe dry)	Drusen (Mild – Moderate dry)
% Prevalence (NEHEM)	2.28%	1.61%	0.8%	10.93%

Prevalence of AMD in Walsall using NEHEM population estimates

Based on these estimates approximately 12% of AMD cases are “wet”. The proportion of these that are also amenable to treatment by anti VEGF is unclear.

Walsall optometrists work in partnership with local hospitals and operate a fast track referral scheme for wet AMD to New Cross Hospital. Fast referral is essential to obtain the best possible outcome from treatment intervention using anti VEGF agents (NICE 2008). The price of new anti-VEGF treatments is high — especially using the new drugs, Lucentis and Eylea, to treat wet AMD — and these costs are unlikely to have been fully factored into budgets by healthcare providers. As these new treatments emerge, demand continues to rise, which means that more patients are attending eye clinics as new treatments for other conditions such as macular oedema and retinal vein occlusion are made available.

As there is no effective treatment for cases of dry AMD which are usually monitored by optometrists when patients attend for routine sight testing. Patients are referred if wet AMD develops concurrently with the dry type or if the level of vision is reduced to such a level that referral for CVI registration or hospital low vision aid services is required. Because these





cases are monitored in this way the total number of cases of dry AMD known to eye care services is unknown.

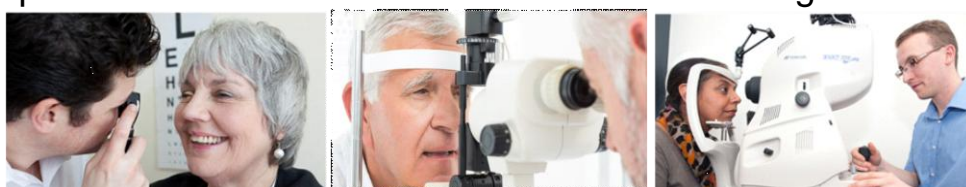
Coding of outpatient data is not detailed enough to allow us to determine the proportion of cases of all types of macular degeneration known to local health services. However RNIB estimates that there are 2,590 people living with dry and/or wet Age Related Macular Degeneration in Walsall.

Smoking is known to increase the risk of AMD by four times. Hence smoking cessation initiatives are likely to be helpful. In addition, studies have shown that specific nutrients in the diet can be useful in slowing the progression of dry AMD (AREDS 2001). These recommendations are similar to what might be expected for a healthy diet in general. For these reasons, stop smoking initiatives and dietary advice are probably the most likely interventions to help reduce the incidence and slow the progression of AMD. Where “wet” AMD still occurs, prompt treatment using an anti-VEGF agent such as Lucentis or Eylea is appropriate (NICE 2008). Access Economics (2009) predicts that the incidence of AMD will rise by 25% per decade.

6.4 Glaucoma

Glaucoma refers to a group of conditions characterised by visual field loss, and pathological changes in the optic nerve head. There may also be raised intra-ocular pressure as in Chronic Open Angle Glaucoma (COAG) which is a common form of the condition. Sight loss in glaucoma is not reversible.

Ocular hypertension (OHT) refers to patients who have raised intra-ocular pressure but do not have any other sign of glaucomatous damage at the optic nerve head or visual field loss. Patients diagnosed with OHT





still require ongoing monitoring as they have significantly increased risk of developing COAG later in life (Meleros and Wienreb 2009).

Glaucoma suspects may have early signs of optic nerve damage but may not yet exhibit field loss. They may or may not have raised IOP. The onset of glaucoma is gradual. The early signs are often subtle and may not be easily identified in a single visit. Patients who are suspected of having glaucoma often require at least two review visits to establish a diagnosis.

The prevalence of COAG is related to increasing age (Rudnicka *et al* 2006).

COAG is approximately three times more prevalent amongst black rather than Caucasian populations of similar age (Rudnicka *et al* 2006).

However, the increase in prevalence with age is steeper in Caucasians than for other ethnic backgrounds.

There is an increased risk of developing COAG if there is a close relative who has the condition (Leske *et al* 2012).

Patients from deprived areas have been shown to present later than those in relatively affluent areas and are therefore more likely to experience visual loss (Fraser *et al*, 2001). As the causation of glaucoma is thought to be at least partly vascular in nature it might be expected that smoking and obesity may affect the incidence of glaucoma. However, studies completed so far have proved inconclusive (Hogg 2012).





Local prevalence

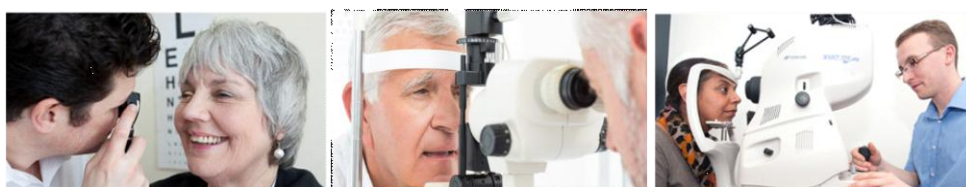
	Mean Estimate glaucoma Cases	High Estimate glaucoma Cases	Low Estimate glaucoma Cases	Suspects Under 60	Suspects 60+	Total Suspects	Ocular Hyperten sion
Walsall	1.45%	2.06%	0.9%	5.00%	7.00%	5.70%	3.20%

Expected number of glaucoma cases in Walsall using NEHEM population estimates

It is likely that the NEHEM estimates are an underestimate of prevalence as the definition of glaucoma used is more likely to pick up more advanced cases and miss early cases with subtle changes. An equity profile produced by Bradford and Airedale PCT suggests that NEHEM may underestimate the prevalence of glaucoma by 1.5 to 2 times.

Generally, initial detection relies on the opportunistic case finding ability of routine sight testing. In some areas, prompted by NICE guideline CG85 (NICE, 2009) and the adverse event report (NPSA, 2009) additional repeat measurement services in optometric practice have been introduced with the intention of decreasing the burden of potential false positive referrals to the hospital eye service. It should be noted that these services do not play any part in the care of patients with diagnosed glaucoma and are not a substitute for hospital care.

All diagnosed glaucoma patients in Walsall are treated by the hospital eye service. The majority of glaucoma patients are routinely reviewed in outpatients in Manor Hospital and complex cases are managed at New Cross Hospital. There is no segregation of this data which is manually recorded and there is no cumulative record kept of the numbers of patients who are Walsall residents registered with the Manor Hospital





Walsall or New Cross Hospital. However RNIB estimates that there are 2,290 people living with glaucoma in Walsall.

The majority of the factors identified as having an influence on glaucoma onset in the previous section cannot be modified by intervention to prevent incidence. Since there is no “cure” for the condition, successful prevention of vision loss relies on adequate control through medical and or surgical interventions and regular monitoring.

Encouraging the uptake of NHS sight tests would improve the likelihood of disease detection in the absence of a more formal screening programme. The NHS Sight Tests already include routine IOP screening in patients with risk factors for glaucoma and patients over forty with a family history of the disease are eligible to NHS sight tests under GOS. Access Economics (2009) predicts that the incidence of glaucoma will rise by 25% per decade.

6.5 Diabetic Eye Disease

Worldwide diabetes is increasing with projections estimating a worldwide diabetic population of 300million by 2025 (King *et al.*, 1998). Diabetic retinopathy is the most common cause of blindness in working age people in the UK (Bunce and Wormald, 2008). Early detection of the condition and treatment can halve the risk of sight loss. Because of this the Department of Health set an ambitious target of 100% screening of those diagnosed with diabetes by 2007.

According to Diabetes UK, the UK's leading diabetes charity (<http://www.diabetes.org.uk/>):

It is estimated that there are 4,200 people in England who are blind due to diabetic retinopathy. This increases by 1,280 each year. People with





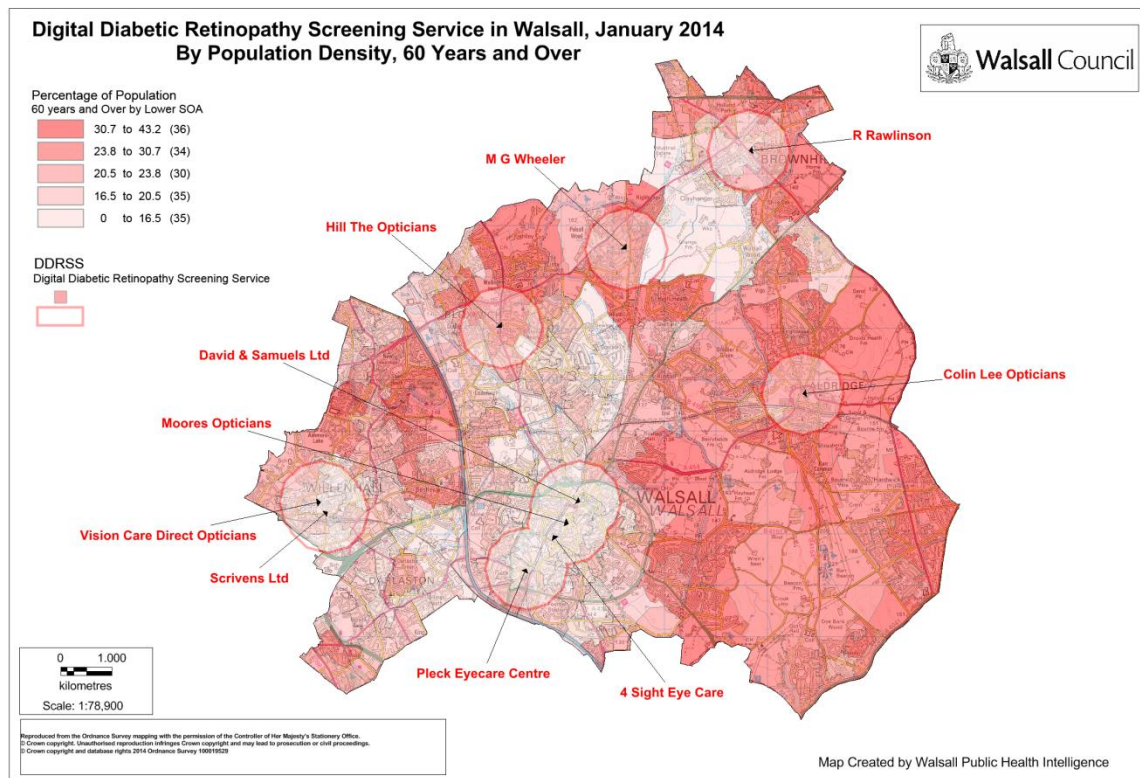
diabetes are 10 to 20 times more likely to go blind than people without diabetes. Within 20 years of diagnosis nearly all people with Type 1 and almost two thirds of people with Type 2 diabetes (60 per cent) have some degree of retinopathy. People with diabetes are twice as likely to suffer from cataracts or glaucoma as the general population.

Two studies based in London demonstrate the higher prevalence of diabetes and diabetes related complications in the South Asian community (Mather, 1985, Nicholl *et al.*, 1986). South Asians, resident in Southall, were 4 times more likely to develop diabetes (Mather, 1985).

It should be noted that Black and Asian populations have a greater risk of developing diabetic eye disease compared to the white population (Kempen *et al* 2004; Das *et al* 1994). From their data the authors found that the rates of retinopathy occur approximately 12 years earlier in South Asians compared with a Caucasian sample (Pardhan *et al.*2004). A publication from the RNIB suggests approximately 35% increased risk of visual impairment in Asian versus white people from the UK due to diabetic disease (RNIB, 2009). Of the 9 NICE recommended care processes for patients with Diabetes examining for diabetic retinopathy is one of them. Local screening services need to know of everyone newly diagnosed with diabetes, as well as people with diabetes who move into new areas or change practices in order to ensure their services are as effective as possible.

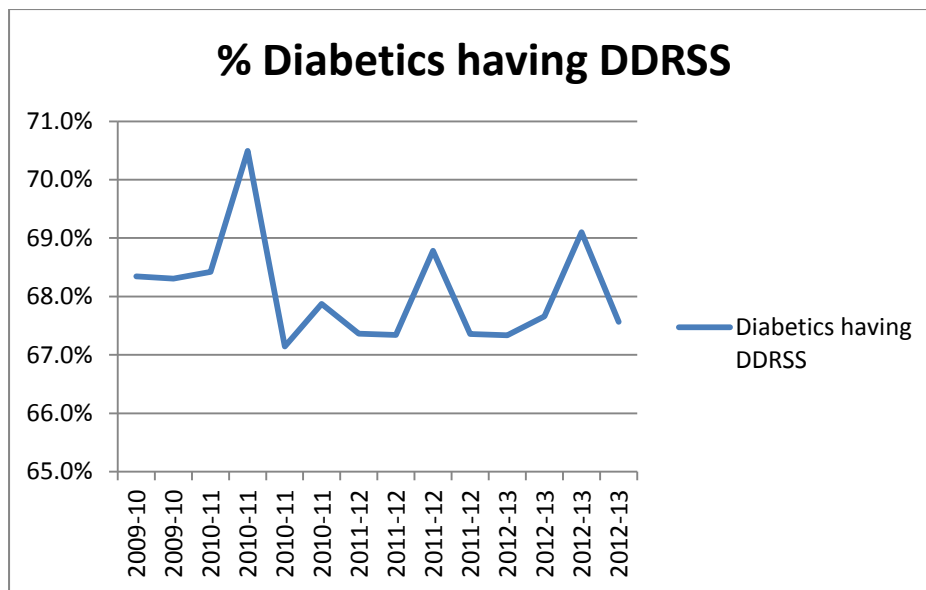
Diabetic retinopathy screening in Walsall is conducted within the NHS Diabetic Eye Screening Programme (NDESP) for Digital Diabetic Retinopathy Screening Service (DDRSS) at 10 accredited sites which in 2012-13 supplied 11512 patients' retinal photographs to the Heart of England's Digital Diabetic Screening Centre.





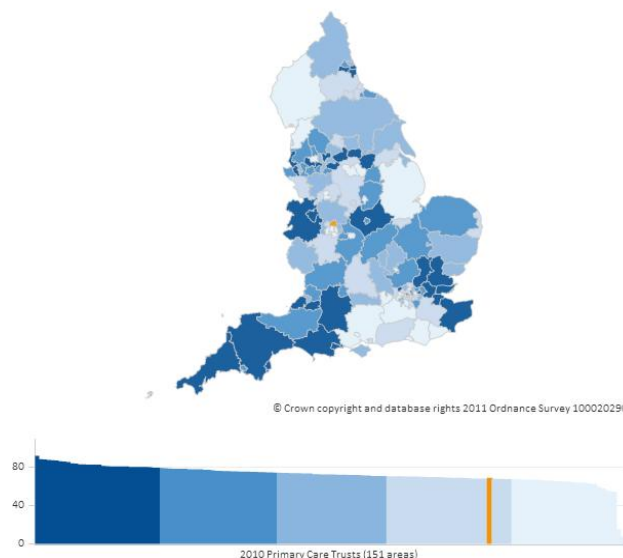
According to the National Diabetes Audit 2011-12, there are 16,536 diabetics in Walsall. This would mean about 1650 patients per DDRSS practice per annum. The DDRSS practices in Walsall manage to screen on average 1150 patients per practice leaving a significant shortfall every year. There are two sites next to each other in Willenhall, with none in Darlaston, Streetly or Pheasey. This scheme relates to diagnosed diabetics only who have their photographs taken in accredited locations and submitted to Heart of England's Digital Diabetic Retinopathy Screening Centre where the photographs are graded and patients and GPs advised of the results.





Source: National Diabetes Audit 2011-12

There is a 67.6% (q4 2012-13) performance level for retinal screening based on the National Diabetes Audit data for the number of diabetics registered in Walsall. Relative to other PCTs this performance is indeed poor placing Walsall PCT towards the bottom (4th quintile) nationally for this issue



Source: NHS Atlas of Variation in Healthcare 2011

2,130 patients who live in Walsall are in an eye clinic (not necessarily Walsall Manor) or 2052 patients are in care at Walsall Manor (but not





necessarily all living in Walsall). The Ophthalmic Photographic Diabetic Retinopathy (OPDR) clinic at Manor Hospital has 436 currently in/awaiting OPDR apt (Jan 2014). RNIB estimates that there are 5080 people living with diabetic retinopathy in Walsall. Access Economics (2009) predicts that the incidence of diabetic retinopathy will rise by about 10% per decade.

At the time of writing, the service provided currently by Heart of England is being re-tendered and the bid awarded in spring 2014 with a view to the new service starting at the beginning of June. Once the bid has been awarded a transition team will be established to hand over the service to the new service provider (Venu-Gopal, N 2013)

6.6 Squints and Amblyopia

Vision and visual functions in children develop rapidly over the first few months of life. By the time a child is 4-6 months old, detecting differences in contrast, colour, eye alignment, and the use of both eyes in a coordinated manner, are all quite advanced. The ability to see as clearly as healthy adults do, appears to be the last aspect to fully mature, and continues to hone as the child grows and is normally complete by the age of about 8 years. New-borns will normally be checked before they leave hospital to ensure that their eyes appear normal and are working properly as part of their general physical examination. After this there are usually no routine reviews of children's eyes unless there is a complaint or the parent notices something untoward or is aware of any familial tendencies to poor eyesight and therefore may attend for a sight test with the optometrist.

The most prevalent eye disorders amongst children in the developed world (Ciner *et al* 1998) include: Amblyopia (lazy eye), 2-3 percent;





strabismus (when the two eyes are not pointing in the same direction i.e. squints, 3-4 percent; refractive errors (short-sightedness, long-sightedness etc.), 15-30 percent; ocular disease, and inherited diseases, less than 1 percent.

The UK National Screening Committee (NSC) agreed with the recommendation in Health for All Children (4th edition), that screening for visual impairment between 4 and 5 years of age should be offered by an orthoptic-led service.

Orthoptists from Walsall Manor Hospital provide a comprehensive orthoptic screening service for the paediatric population of Walsall. The service covers 90 schools including stand-alone nursery units, independent schools and private schools. Visits are scheduled to cover both morning and afternoon sessions as nursery children usually attend part time.

Primary Orthoptic screening service of all children aged 3-5 years by school year

School year	Cohort identified by date of birth	Number omitted from cohort	Total number to be screened	Total number actually screened
2010/11	4,797	118	4,679	3,314 (70.8%)
2011/12	5,053	137	4,916	4,205 (85.5%)
2012/13	4,564	63	4,501	3,575 (79.4%)

Children may be omitted from the cohort if they are already known to be receiving treatment in the HES or if parents refuse consent. Total number actually screened only reflects the number seen on school





premises and does not account for the reception children subsequently seen in their local health centre.

School year	Number screened	Pass result	Re-test result	Already being treated	Referred to HES	Referred to local optician
2010/11	3,314	2,436	129	35	454	260
2011/12	4,205	2,947	264	50	555	389
2012/13	3,575	2,367	227	59	649	237

Orthoptists in Walsall also provide a vision screening service for children aged 0-8 years at 9 health centres in the Walsall borough.

Referrals are received from any health care professional including health visitors, GPs, community based health care professionals and school nurses who have a concern about the visual development of a child. The referrals are managed at local health centres and the children are discharged, reviewed or referred to hospital eye services as appropriate, thus reducing false referral rates to the HES. Children who do not receive primary school screening by the end of reception year are offered an appointment at the health centre most local to them.

A retrospective review of records of participants in the preschool vision screening program in the Walsall (Hu *et al* 2012), for the 2006-2007 school year, 2,830 of 3,623 children (78%) were screened, of these, 413 were referred to the Hospital Eye Service. Comparison of the screening results and the Hospital Eye Service examination revealed that recorded visual acuities were similar in 81% of subjects and ocular alignment in 94%. Visual acuity was 6/9 or better at the hospital examination in 87%





of referred children, with 46% requiring spectacle use only; 17% of referrals were diagnosed with amblyopia.

The Walsall vision screening program diverges from UK national guidelines by testing at an earlier age. However there was no evidence from the audit that earlier screening led to a large number of incorrect referrals. Indeed early screening may allow for better outcomes.

A recent review of such services in the UK concluded that there was no robust evidence to support significant changes to the content of the current NSC recommended vision screening programme of children aged 4 – 5 years in the UK (Solebo, AL & Rahi, JS 2013)

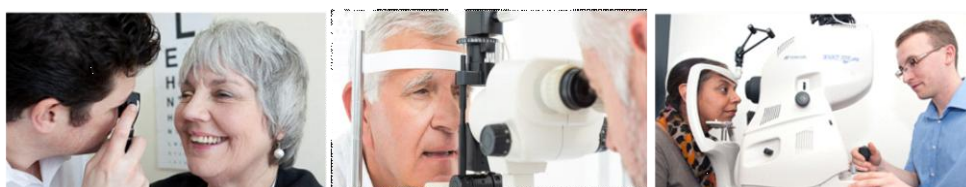
6.7 Referral Procedures

Referrals by optometrists are governed by the Opticians Act 1989 (as amended), the National Health Service Act 1977 as amended by the Health and Social Care Act 2001, statutory regulations, guidance by the Department of Health and the rules of the General Optical Council.

Section 26 of the Opticians Act gives optometrists discretion whether or not to refer a patient to a registered medical practitioner.

An optometrist may therefore refer a patient following an eye exam to:

- a general medical practitioner (GP)
- an ophthalmic hospital (eye departments of general hospitals and treatment centres) directly or via a referral centre
- another optometrist
- a non-medically qualified practitioner with the appropriate qualification or expertise.



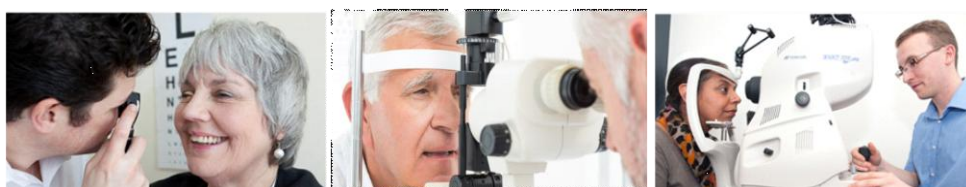


If the optometrist decides not to refer, he must record the patient's condition, the reason for not referring and the advice and treatment (if any) given to the patient. If appropriate, and with the patient's consent, the optometrist may inform the patient's general medical practitioner.

Normally, a referral is only made with the patient's consent. In such circumstances, the optometrist must inform the patient of the contents of the referral. The regulations state that the optometrist 'must give the patient a written statement that he has done so, with details of the referral'. Consequently, the optometrist will normally give the patient a copy of the letter of referral. The referral must inform the person to whom the patient is referred of the optometrist's findings and the reasons for the referral, usually in writing. The reasons should include:

- the optometrist's grounds for thinking that the patient may be suffering from injury or disease of the eye
- an indication of the urgency of the case.

Generally optometrists use an NHS form entitled "GOS 18" or a letter or a practice template for referring to GPs and the Hospital Eye Services directly or via GPs. Designed in the early days of the General Ophthalmic Services, the form presents significant challenges with legibility when photocopied when the hand writing often becomes very difficult to read if not impossible. Furthermore they often do not contain all the relevant data that would help effectively direct the referral. In 2011 it was agreed that a Walsall GOS18 (WGOS) be developed (electronic pdf) to improve the legibility and the quality of data provided. With the involvement of the then medical director, the then optometric advisor and the lead ophthalmologist at the Manor Hospital, a more comprehensive referral template for use by optometrists was developed (Appendix 1). The referral form was designed to provide clear and

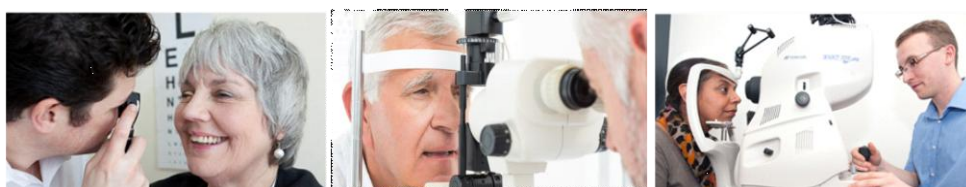




succinct information and improve the referral process and care for the patient. Although not mandatory, its use was highly recommended to optometric performers and contractors in Walsall and this was reinforced during contract compliance visits by the optometric advisor. Referrals were at the time made based on national guidelines which were regarded to be not as useful as more detailed local ones. Details of referral for emergencies and wet AMD were also given. This work led to the development by this forum of "Referral Guidelines for Optometry" (Appendix II) designed to clearly signpost optometrists with respect to their referrals to GPs and to A&E.

Pilot Ophthalmology Referrals Triage in a Primary Care Setting

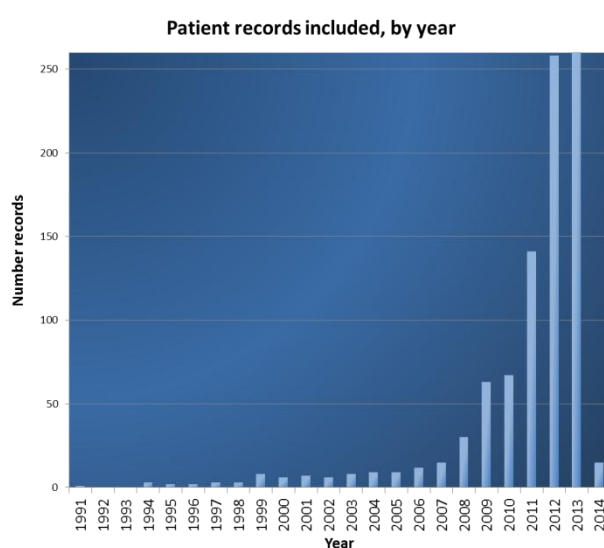
A pilot of an ophthalmology referral triage scheme has been running over the past year in Walsall. Based at a local optometric practice, a General Medical Practitioner with Special Interest (GPwSI) has been triaging all referrals from optometrists and GPs limited to 5 practices in the Pleck area. An audit of the results has not been available at the time of writing. However anecdotal feedback from the Local Optical Committee is not favourable as it is conducted in commercial premises and has confused some attendees. Furthermore, no consultation or information was provided to optometrists in the area. However no evidence regarding the current position with respect to false positives is known at the time of writing. This particular pilot, judged on cost effectively was deemed not viable in its current format and ceased in April 2014





6.7.1 Referral activity from primary care to the hospital eye service.

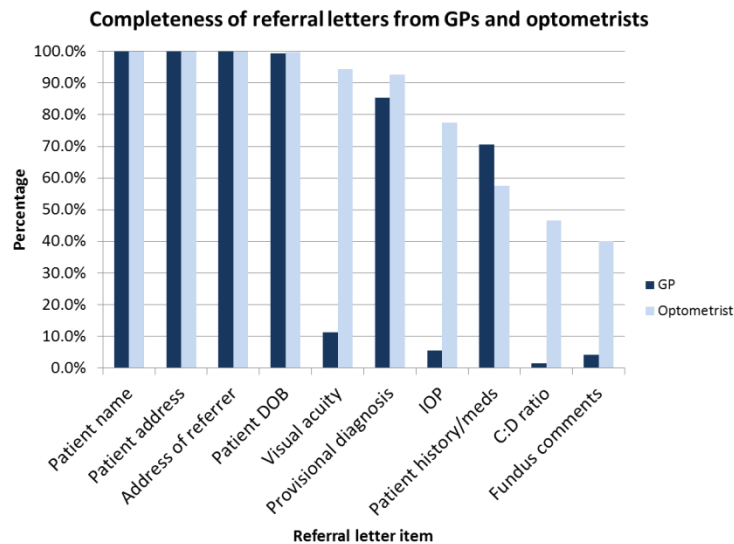
The accuracy, quality, type and outcome of referrals to the hospital eye service (HES) in Walsall is not known. It is also unknown whether systematic differences in referrals exist between optometrists and general practitioners. To ascertain this information, a hand audit led by Mathew Fung a Specialist Registrar (Public Health), was conducted of patient records (paper based) at Walsall Manor Hospital. Approval from the Caldicott Guardian at Walsall Manor Hospital and approval from the Clinical Commissioning Group to undertake this audit was gained. A report was run from the hospital system to identify referrals into the hospital eye service from Q4 2013 retrospectively until 1000 notes containing a referral had been reached. A data collection template was developed in Excel, using automated fields and data validation processes where possible to minimise error. A process to ensure timely retrieval and couriering of notes was agreed with the hospital audit and compliance team. Four team members from Public Health Walsall participated in auditing records in April 2014. Each set of notes were audited using the latest referral into the hospital eye service. The data



were analysed, and statistical analyses performed.

1000 patient records were audited involving referrals into the hospital eye service. Of these, 569 were from optometrists, 143 were from GPs, and the remaining 288 were referrals from orthoptic





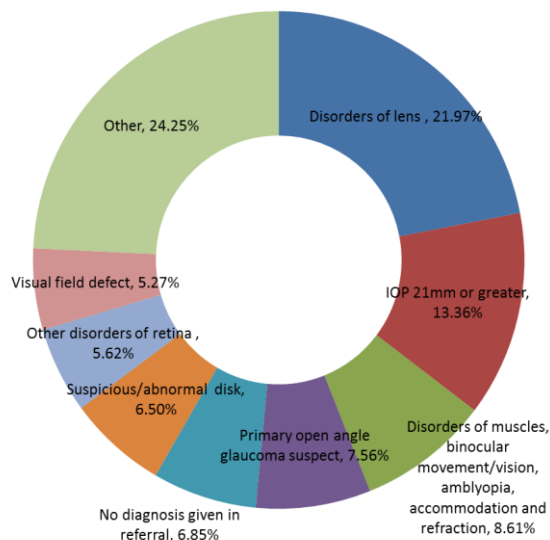
screening, retinal screening or internal referrals. 88% of records were from 2009 onwards.

Referral letter completeness for basic information was excellent for both GPs and optometrists. Medical and

optometric specific information contained within referral letters was heterogeneous.

However, degree of urgency of referral was seldom stated

Presence of degree of urgency in referral letters, and average days between referral and 1 st appointment		
	Referred degree of urgency	Average days between referral and 1 st appointment
Not detailed	74.80%	80
Routine – within 12 weeks (84 days) to HES	16.80%	74
Soon – within 4 weeks (28 days) to HES	5.00%	47
Urgent – within 1 week (7 days) to HES	3.40%	32



– 77% of records were devoid of any indication of urgency. 13% referrals were stated as routine, 7% were ‘soon’, and 3% were urgent.

The most common referrals to HES by GPs and optometrists are as follows:

Optometrists

General Medical Practitioners

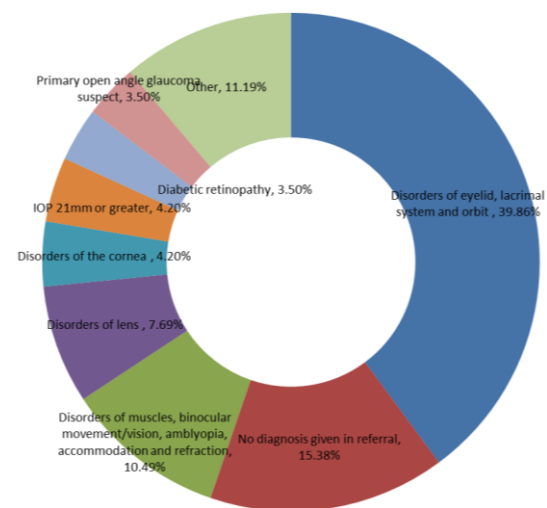




Only 7.7% of referrals from GPs and 6.2% of referrals from optometrists were discharged from HES with a 'normal vision' diagnosis.

Concordance (positive predictive value) in referred condition and diagnosed condition at HES between optometrists and ophthalmologists was 76.1%, and between GPs and ophthalmologists was 67.2%. The types of conditions seen and referred by GPs and optometrist are heterogeneous, and also the skills, training, resources and instruments available differ between each group. GPs were most likely to refer conditions to the HES relating to disorders of the eyelid, lacrimal system and orbit, whereas optometrists most commonly refer for disorders of the lens (predominantly cataract).

It would have been preferable to have audited referrals selected at random, however due to difficulties in collating and gaining access to records, we were obliged to audit the identified and available referrals for this project. Patients referred into the hospital eye service will inevitably lead to a degree of 'false positives'. Even though the percentage of 'normal vision' diagnoses was low in Walsall, this is an issue that we should be aware of particularly given budgetary pressures and constraints faced by the healthcare system.





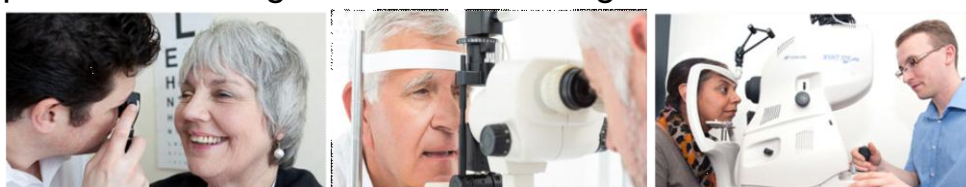
7. Visual Impairment

Visual impairment (when the level of vision is below that which the individual requires for their everyday tasks) has a very significant impact on the quality of life (Klesert. and Chang 2005).

7.1 Definition of Visual Impairment

The definition of Visual Impairment is not so straight forward as might appear at first glance. Most of the literature uses clinical measures, predominantly visual acuity in the distance measured using an illuminated Snellen chart with usual aids if worn i.e. contact lenses or glasses (“presenting vision”) or after full correction of refractive error (“best corrected visual acuity”) as the basis for categorising vision impairment. Normal vision is recorded as 6/6, which means that a person can see at 6 metres what a person with normal vision can see at 6 meters. Degrees of reduced vision are measured similarly, where the first (top) number in the measure is the furthestmost distance at which the person can clearly see an object and the second (bottom) number is the distance at which a person with normal vision could see the same object. For example, 6/18 vision means that the person can clearly see clearly at 6 meters (but not more) an object that a person with normal vision could see clearly at 18 meters (but not more).

The World Health Organisation (WHO) classifications use best corrected visual acuity i.e. vision in the better eye after full correction and define vision impairment is as a Snellen acuity $<6/18$ and blindness is defined as visual acuity $<3/60$. Visual acuity of $<6/12$ is not used internationally to define impairment but is reported by many studies as it represents a reduction in visual acuity sufficient to affect lifestyle e.g. it corresponds to the requirements for sight for the UK driving licence. The RNIB consider





6/12 to be "sight loss" and suggest that of the 2.95% of the UK population living with sight loss, some 50% have avoidable sight loss. Most of these are due to uncorrected refractive error but it does suggest a lower uptake of routine sight tests in the UK.

Living with Sight Loss to March 2011	Estimated number of people living with sight loss in 2011	Percentage of people living with sight loss compared to overall population in 2011	Estimated number of people predicted to be living with sight loss in 2020	Percentage of people living with sight loss compared to overall population in 2020
Walsall	7,310	2.93%	8,350	3.28%
England	1,564,340	2.95%	1,903,330	3.36%

Source: RNIB Sight loss Data Tool (Nov 2013)

7.2 Severely Sight Impaired (SSI) and Sight Impaired (SI)

The number of blind people in Britain has been recorded since 1851. Initially, this consisted of a declaration of blindness on Census returns. These were discontinued after 1911. In 1920, the Blind Persons Act created statutory benefits for the blind and its implementation led to a register of blind persons. Initially, all that was required for registration was a certificate from any medical practitioner that the patient was blind. From the mid-1930's, certificates were only accepted on designated forms (BD8) signed by ophthalmologists. The National Assistance Act in 1948 set up the current system of registration, with local authorities required to establish registers of people with disabilities, including those





blind or partially sighted, and to administer the statutory services to which the visually disabled are entitled.

Any person seeking registration as blind or partially sighted is required to see an ophthalmologist who certifies that the person is eligible for registration. A person is certified as severely sight impaired (blind) if they are “so blind that they cannot do any work for which eyesight is essential”. This is recommended to be a best binocular acuity of less than 3/60 Snellen, or a much contracted field of vision. A person can be certified as sight impaired (partially sighted) if they are “substantially and permanently handicapped by defective vision cause or by congenital defect or illness or injury”. It is suggested that this corresponds to an acuity of 6/60 or less or gross field defects (or 6/24 or less in certain cases).

Since November 2003, the system changed in England only. This change was initiated by concerns that only a minority of people eligible for registration were taking up registration. The BD8 form has been superseded by a “certificate of vision impairment (CVI)”. There are now two categories of vision impairment: “sight impaired (SI) or partially sighted” and “severely sight impaired (SSI) or blind”. Mechanisms have also been put into place to ensure that visually impaired people are referred promptly from the high street optician and hospital eye service for support. The terms blind and partial-sight are now superseded by the terms "Sight Impaired" (SI) and "Severely Sight Impaired" (SSI)

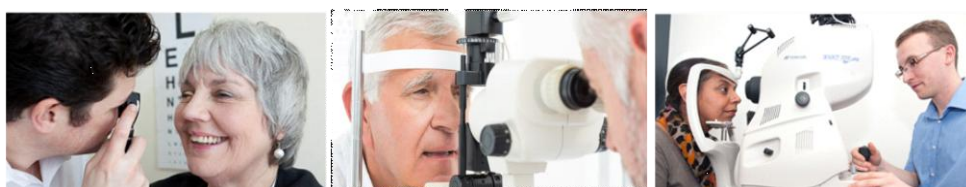




Certification and Registration to March 2011	Walsall	England
Total number of people registered blind	760	147,810
Total number of people registered partially sighted	845	151,010
Total number of people registered blind or partially sighted	1,605	298,820
Number of people newly certified as Severely Sight Impaired (blind) in 2010/11	27	9,964
Number of people newly certified as Sight Impaired (partially sighted) in 2010/11	37	11,938
Total number of Certification of Vision Impairment in 2010/11	64	22,501
Rate of Certifications of Vision Impairment issued per 100k population in 2010/11	24.9	43.1

Source: RNIB Sight loss Data Tool (Nov 2013)

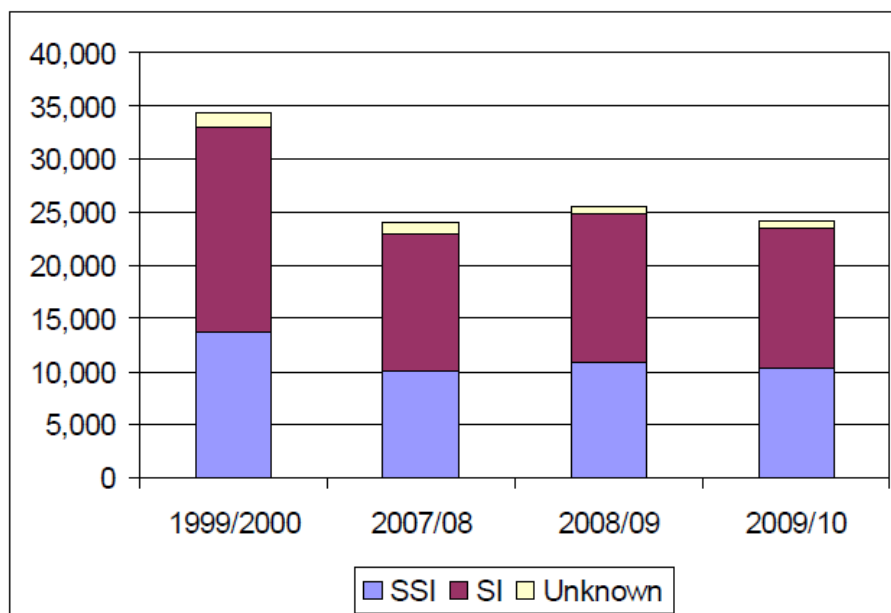
This paints a potentially positive picture for Walsall with a rate of Certification being much lower than the National average. However Walsall Society for the Blind who collate and manage the CVI registrations have suggested that this "under reporting" is possibly due to:





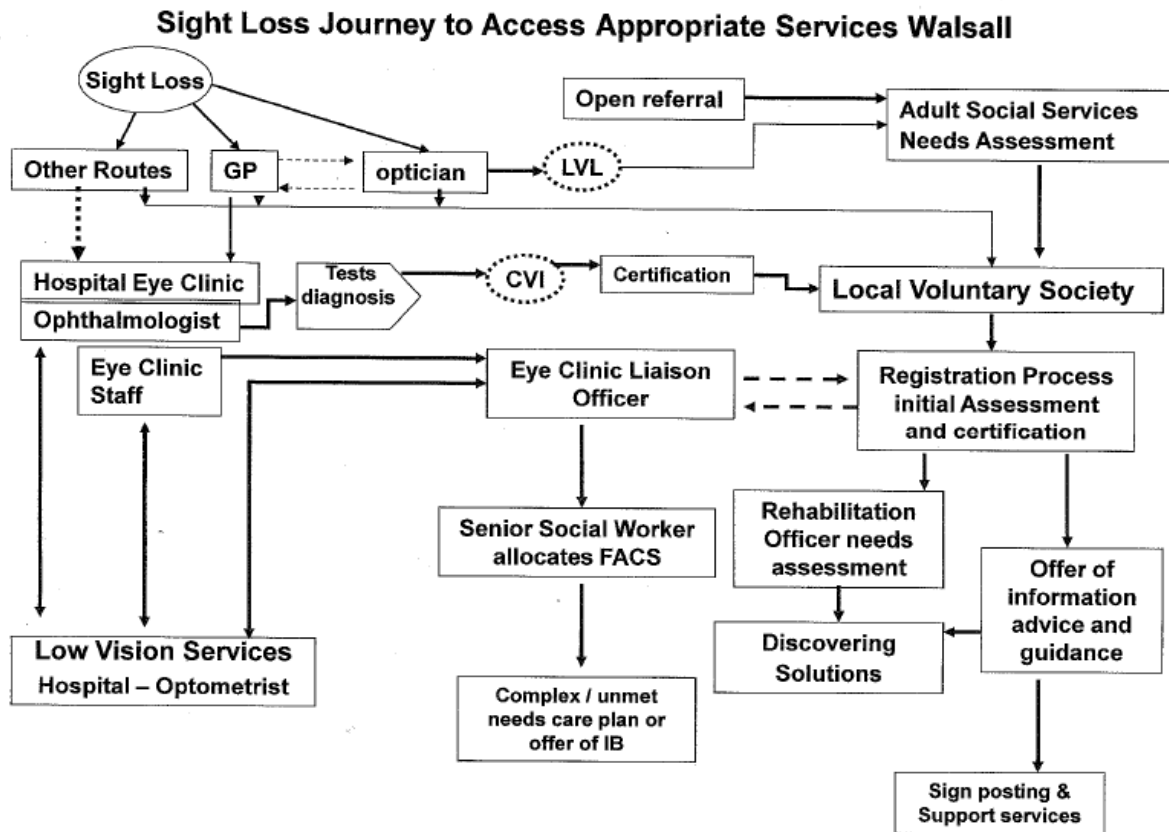
- The availability of anti-VEGF interventions which may mean that patients discharged from the Hospital Eye Service may not be going back for CVI Registration when their eye lesions worsen and are thus "lost" off the CVI register (Reed 2013)
- Work undertaken by WSftB suggests that ethnic minorities do not take the opportunity to register and are considerable underrepresented on the CVI register (Reed 2013)

Total of certifications as severely sight impaired and sight impaired, England and Wales, 1999 to 2010.



Source: Bunce 2010, 2011; RNIB 2012





Source: Walsall Society for the Blind (Reed 2013)

Apart from a rather convoluted sight loss journey, some 82 consultants and 11 Hospital Eye Service Departments in the West Midlands and one in Swansea were involved in the CVI registration of Walsall residents last year. It is thus not surprising that the Eye Care Liaison Officer has considerable difficulty in chasing up the paperwork and ensuring eligible patients are registered.

The Certification and Registration Process in brief is as follows:

1. Patient seen by Ophthalmologist and CVI completed
2. 1 copy of CVI sent to Moorfields Eye Hospital in London (who are managing the UK CVI registration database)
3. 1 Copy of CVI sent to Local Social Services



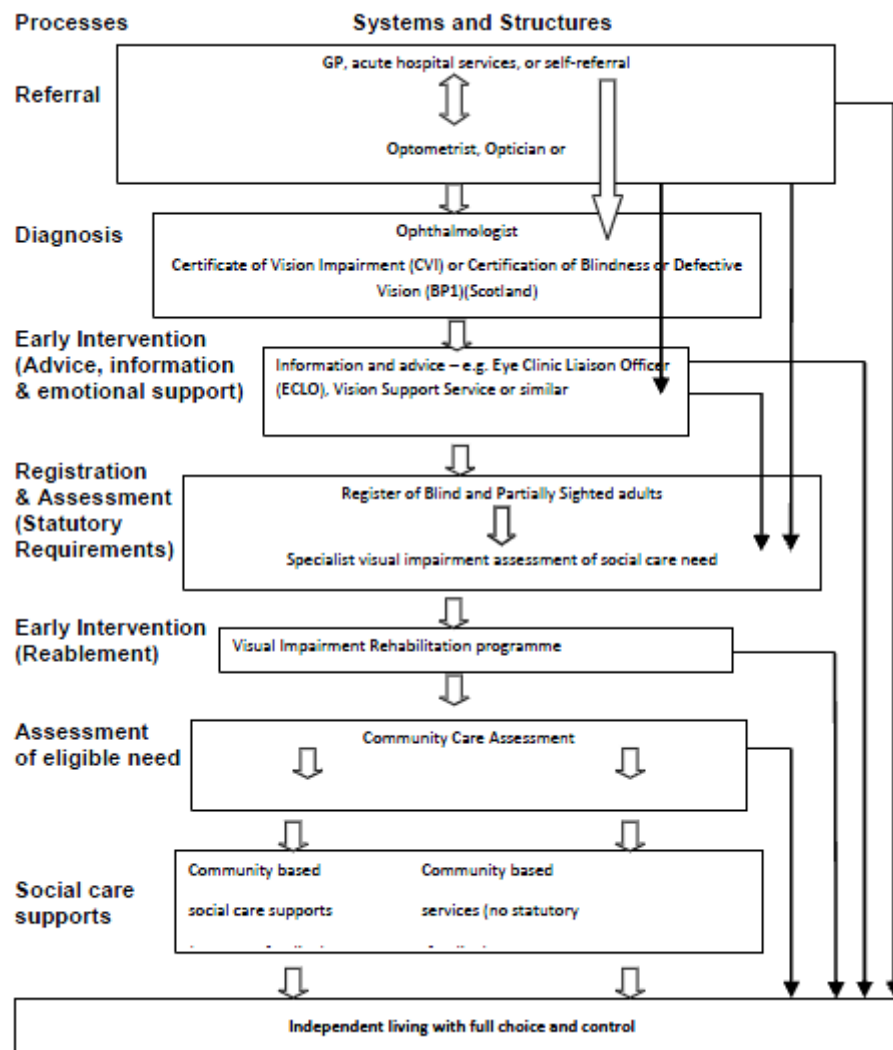


4. Local Social Services register patient on Sight Impaired or Severely

Sight Impaired Register

5. Local Social Services offer Rehabilitation Support

The adult sight loss pathway in the UK is as follows:



7.2.1 Low Vision

A person with low vision has significantly reduced visual acuity or contrast sensitivity, a significantly obstructed field of vision -- or all three.





They will experience:

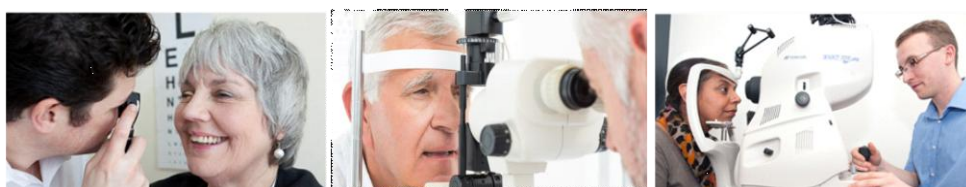
- Difficulty recognising faces of people
- Difficulty reading -- print appears broken, distorted or incomplete
- Difficulty seeing objects and potential hazards such as steps, curbs, walls, uneven surfaces and furniture

People with low vision usually have some usable residual vision. An ophthalmologist or optometrist can evaluate how they see and may be able to prescribe optical devices to maximise their remaining vision. This functional vision assessment by way of a sight test to begin with is an important step in helping improve quality of life.

Even with regular spectacles or contact lenses, a visual image -- whether a sentence from a book or a crossing at a busy intersection -- may appear distorted, blurred or incomplete if one has low vision. An optometrist may recommend or prescribe devices such as magnifiers and tinted lenses to help take full advantage of the sight left. Non-optical devices such as large-print clocks and remote controls, as well as signature and writing guides, are also popular.

If vision loss can't be corrected by optometric or ophthalmological interventions, vision rehabilitation can help. Vision rehabilitation services equip people who have low vision with skills and strategies to help them remain safe, independent and active at any stage of life.

These services may be provided by a multidisciplinary team of professionals who can introduce new methods of using remaining vision to help maximise daily functioning and adjust to vision loss. Such a team includes specially trained ophthalmologists, optometrists, social workers, nurses, occupational therapists, vision rehabilitation therapists, career counsellors, orientation and mobility specialists and others. Currently to

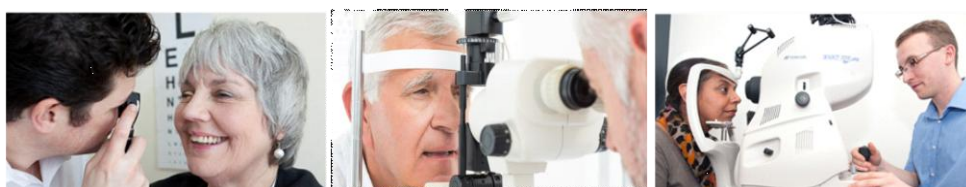




access this support have to be referred to the Hospital Eye Services who after appropriate evaluation, diagnosis and treatment, will involve other professionals and agencies to support low vision patients. Alternatively there are Charities that will provide help and support to individuals.

Walsall Society for the Blind provides services for the blind and partially sighted people of the Borough whilst enjoying a well-established working relationship with Walsall Social Services Department. The service is based at Hawley House which is a purpose-planned centre for blind and partially sighted people containing facilities and resources applicable to visual impairment. Advice, assistance and services are available to all blind and partially sighted persons resident in the Borough, but not to the exclusion of others with sight problems who may not be registered. Services provided for at the Centre include material and monetary help, day care, social activities and the Talking Newspaper service. The Society works with voluntary home visitors to provide support to individuals in their own homes. They are commissioned by Walsall Council to manage the CVI registration database for the Borough of Walsall. The Society also runs an information desk at Manor Hospital.

Walsall Eyes are a charity run by and for the benefit of blind and partially sighted people within the Walsall area. The group meets on a monthly basis and campaigns to improve the services offered within the borough.





7.3 Public Health Indicator

In its document entitled “Improving outcomes and supporting transparency” part 2 “Summary technical specifications of public health indicators of January 2012”, the Department of Health has included under its section 4 of “Healthcare public health and preventing premature mortality” a “preventable sight loss” indicator. This new indicator will track the rates of three major causes of sight loss including glaucoma, age related macular degeneration (AMD) and diabetic retinopathy. The indicator is based on certificates of vision impairment (CVI) data.

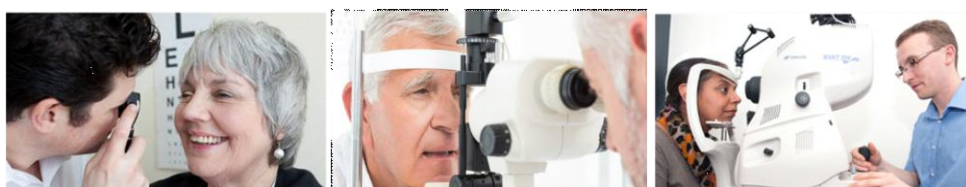
The indicator will be calculated by taking the proportion of partially sighted/blind registration for these preventable eye diseases, against the total number of registrations.

Numerator: The number of CVI registrations that are due to AMD, glaucoma and diabetic retinopathy.

Denominator: Total number of CVI registrations.

A CVI is a document stating that a person has a significant sight problem affecting both eyes that is not correctable with either spectacles or contact lenses. The process is completely voluntary and is the first of a two-part process. When a CVI is completed, one copy is sent to the certifications office at Moorfields for anonymised analysis. A second copy is sent to the patient’s social service department who contact the patient, offers them a needs assessment and formally places them on the register (completing registration).

Ophthalmologists are responsible for starting the certification process, but optometrists, administrators and social care professionals are also



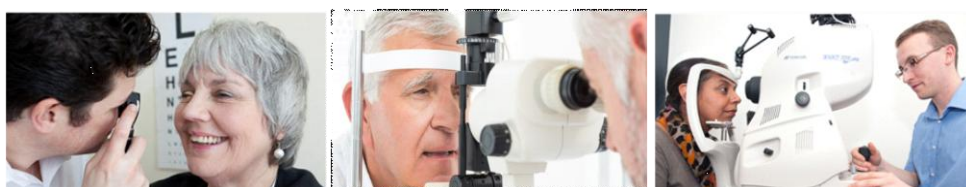


involved and can help facilitate the process. The CVI data set is a useful data source for the causes of uncorrectable visual impairment.

The proposed outcome measure for eye health focuses on measurement of reduction in the level of avoidable visual impairment from glaucoma, age related macular degeneration (AMD) and diabetic retinopathy, which are three of the main causes of sight loss. Levels of sight loss due to these conditions and estimates of the number of people with these diseases at two points in time (2010 and 2020) are given in a research report by Minassian and Reidy (2009) and Minassian *et al* (2011). In addition, the report details the impact of increased or decreased rates of detection. A decrease or increase in this level will give an overall indication of the eye health of the nation.

Healthcare and premature mortality	Year	England	Dudley	Walsall
4.12i Preventable sight loss - age related macular degeneration (AMD)	2011/12	110.5	134.8	67.3
4.12ii Preventable sight loss - glaucoma	2011/12	12.8	9.2	—
4.12iii Preventable sight loss - diabetic eye disease	2011/12	3.8	5.2	—
4.12iv Preventable sight loss - sight loss certifications	2011/12	44.5	52.4	25.2

4.12i is the crude rate of sight loss due to age related macular degeneration in those aged 65+ per 100k population; 4.12ii is the crude rate of sight loss due to glaucoma in those over 40years old per 100k of

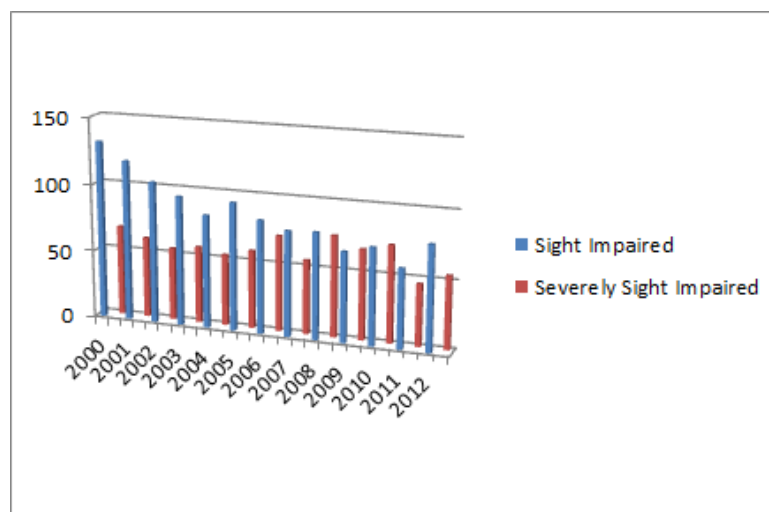




population; 4.12iii is the crude rate of sight loss due to diabetic eye disease over 12 years old per 100k of population

Clearly the missing data along with an apparent better performance than England and Dudley, suggests that the data is incomplete. Moorfields have stated that the numbers are too small so do not show up on the Public Health Outputs Indicator (Zekite, A 2013).

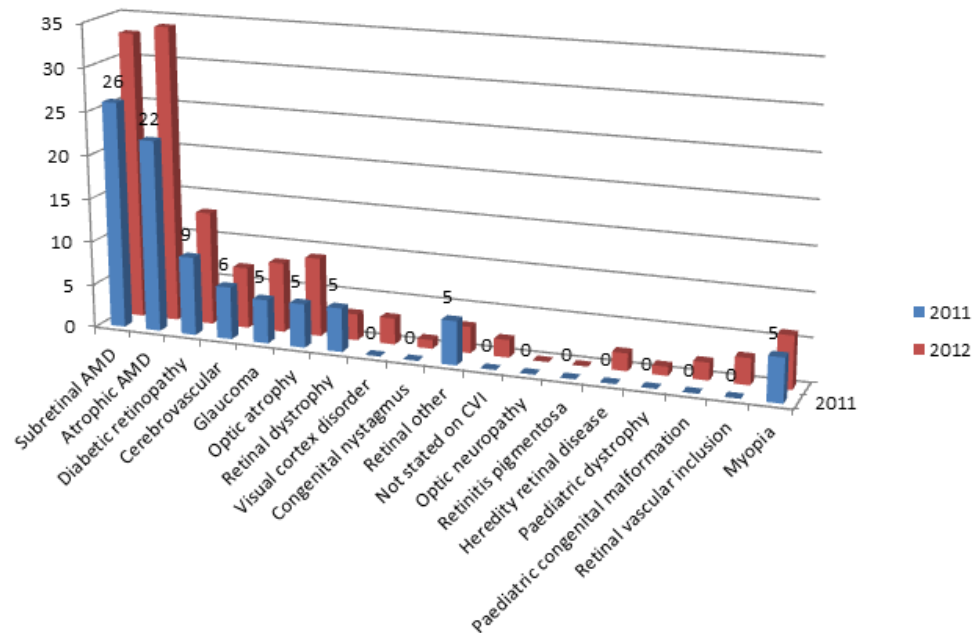
Walsall Society for the Blind collates and manages CVI data on behalf of Walsall Council. Using the data that they have, the following issues emerge (Reed 2013):



Since 2000 the CVI registrations for Sight impairment have reduced and for Severely Sight Impairment they increased slightly between 2006 and 2011 but have now dropped back to about the same as pre-2006 levels.

For the last two years the registration by eye condition data suggests an increase in registrations due to both types of AMD, Diabetic Retinopathy and Glaucoma.





The “preventable sight loss” indicator for Walsall was thus 59% for 2011 and 67% for 2012 indicating a worsening outcome.

However this indicator is by definition an indicator of end stage eye lesions.

Almost 2 million people in the UK are living with sight loss (vision less than 6/12). By 2020, this number is predicted to increase by 22%. It will double to 4 million people by the year 2050 (Access Economics 2009). These increases are mainly due to the demographics of the population and eye health will be particularly subject to this because over 80% of sight loss occurs in people over 60 years (Access Economics 2009).

7.4 Burden of Visual Impairment

The burden of eye disease, visual impairment and blindness increase exponentially with age (both for individuals and populations).

Access Economics (2009) report the following changes in the UK population by condition from 2010 to 2050:





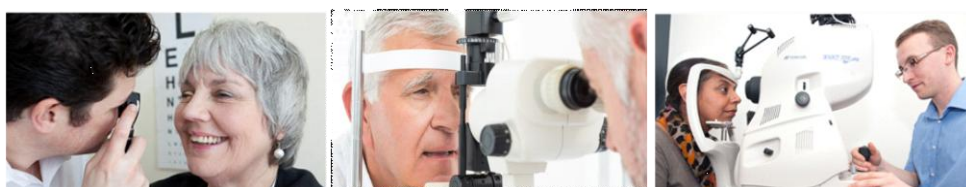
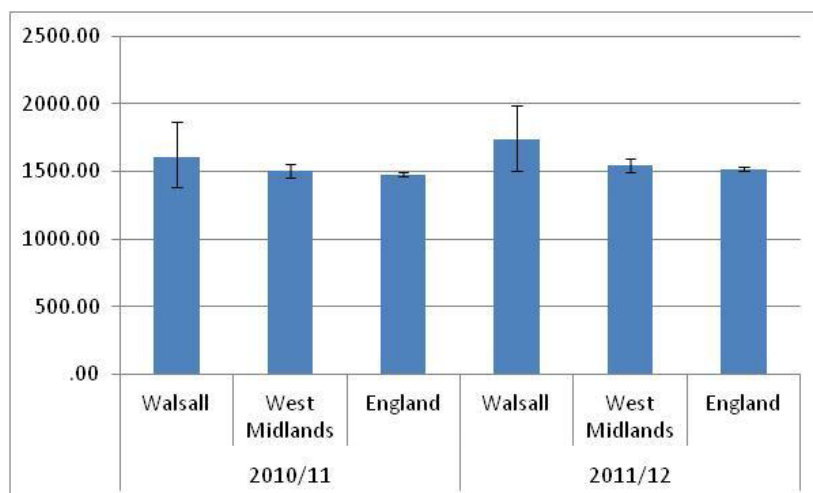
- Numbers with AMD will almost double to 890,000 people;
- Numbers with cataract will increase 140 per cent to 600,000 people;
- Numbers with diabetic retinopathy will increase 46 per cent to 93,000 people;
- Numbers with glaucoma will double to 200,000 people;
- Numbers with uncorrected refractive error will double to 1.9 million people;
- Numbers with other eye disease will rise to nearly 300,000 cases

Falls

Walsall has a higher rate of emergency admissions for fractured neck of femur regionally and nationally for those aged over 65.

Age-sex standardised rate of emergency admissions for fractured neck of femur in those aged 80+ per 100,000 (Source: Public Health Outcomes Framework)

	65+			65 to 79		
	Walsall	West Midlands	England	Walsall	West Midlands	England
2010/11	463.11	461.02	451.89	208.44	229.10	224.24
2011/12	480.15	463.34	457.16	201.89	223.58	222.17





There is growing evidence of the impact of impaired vision risks on falls (Ivans *et al* 1998). Wood *et al.* (2011) found older adults with AMD had a higher incidence of falls and injuries. Almost half (47 per cent) of all falls in the population with visual impairment were directly attributable to the visual impairment (Scuffham *et al.* 2003). The risk of having an unintentional injury is higher for people who are visually impaired compared with the fully sighted population (Legood *et al.* 2002). The evidence on falls, which relates mainly to older people, suggests that people with visual impairment are 1.7 times more likely to have a fall and 1.9 times more likely to have multiple falls compared with fully sighted people. The odds of a hip fracture are between 1.3 and 1.9 times greater for people with visual impairment (Legood *et al.* 2002). The Ethical Strategies study (2003) identified annual cost estimates associated with vision impairment in the elderly population as £4,980 per person. Assuming at least 50% of this cost is from falls treated on the NHS and from the cost of residential care, which is shared between the NHS and local authorities, estimated annual future savings are £2,490 per person per year.

Improving the vision of an older person should lower the likelihood of a fall. Randomised controlled trials suggest that this is often true (Gillespie *et al* 2009)

Of the total cost of treating all accidental falls in the UK, 21% was spent on the population with visual impairment and 10% was directly attributable to visual impairment (Scuffum *et al* 2002). Using Scuffham's modified approach (T Boyce 2011, and R Swift 2013 - RNIB) fall numbers attributable to visual impairment may be estimated. 8 per cent of falls that result in hospital admissions occur in individuals with visual impairment costing 21 per cent of the total cost of treating accidental





falls. 3.85 per cent of falls resulting in hospital admissions could be attributed to visual impairment costing 10 per cent of the total cost of treating accidental falls. Using POPPI data for Walsall and applying this approach suggests that in 2014 :

- 12934 people of 65y or older will have a fall
- 1034 will be admitted to hospital
- 82(8%) aged 65 and over with a visual impairment who have a fall will have to be admitted - costing 21% of the total cost of treating accidental falls
- 40(3.85%) people ages 65 and over with visual impairment will have a fall directly attributable to visual impairment - costing 10% of the total cost of treating accidental falls

When VI is actively addressed as part of a falls reduction plan, falls can be reduced by up to 14% (Day et al 2002)

Depression

Vision loss is not only associated with functional problems but also with affective disorders including lower morale, depression, social isolation, reduced feelings of self-esteem, diminished emotional security and low levels of social interaction. (Branch *et al.* 1989).

Vision impairment is associated with higher than normal risk of depression and social isolation. This was shown in the studies by Branch *et al.* (1989), Campbell *et al.* (1999), Carabalese *et al.* (1993), Wahl, Oswald *et al.* (1999) as well as Wahl, Schilling *et al.* (1999). The Carabalese study found that persons with vision impairments had a 2.3 times greater risk of depression than those without a vision problem.





Rates of depression in AMD are substantially greater than those found in the general population of older people, and are on par with those of other chronic and disabling diseases AMD is still a major risk factor for depression and people with activity restriction due to vision loss are at greatest risk. An integrated approach to depression management in older adults with impaired vision may be the best course of action (Casten RJ, *et al* 2013).

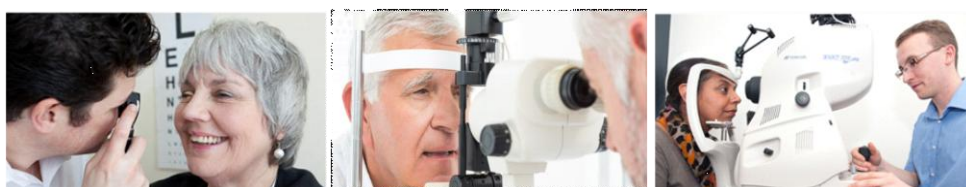
Costs

The resources consumed and costs associated with a disease or health care intervention can be divided into two main components

Direct Costs - healthcare sector costs (primary care, secondary care and emergency care)

Indirect Costs - costs to patients and their families - out-of-pocket expenses such as prescription co- payments, costs to adapt their homes and purchase of visual aids. In addition there is the time spent by families and friends caring for a blind or partially sighted person. Other costs include social services or other benefits provided (such as a disability allowance or tax credit) as well as nursing home or other residential care that may be required. People who are blind or partially sighted are also less likely to be in employment so there are also productivity losses associated with their condition which represent a loss to society as a whole and which should be included in any societal cost evaluation.

Even if all of these costs are identified and capable of being quantified, there remains the intangible consequences such as pain and suffering





which ideally would also be considered (although placing a monetary value on these can be difficult).

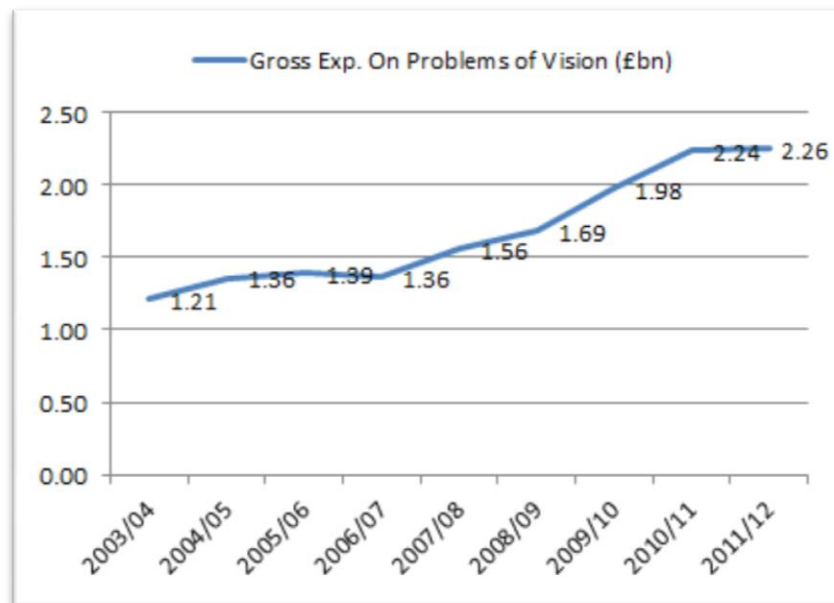
Apart from health and social impacts, there are also significant economic impacts resulting from sight loss. Comprehensive Australian studies indicate that vision disorders cost an estimated 0.6 per cent of GDP (Au\$9.85 billion in 2004) (Taylor *et al*, 2006). Frick and Kymes (2006) argue that these findings rank the absolute economic burden of sight loss with that of cancer, dementia and arthritis. "The impact relative to [an] entire...economy also emphasises the non-trivial nature of the burden of visual impairment. The results should catch the attention of health policy makers because they suggest that, even in a developed economy, visual impairment can limit economic development". Studies have also shown that people with visual impairment tend to have longer hospital stays, make greater use of health and community services' Health services and are more likely to be admitted to nursing homes (Colquitt *et al*. 2008). According to RNIB, in 2008 sight loss cost at least £6.5 billion, and this is likely to increase as the number of people with sight loss increases. This figure does not include the cost of sight loss in children.

This cost is made up of:

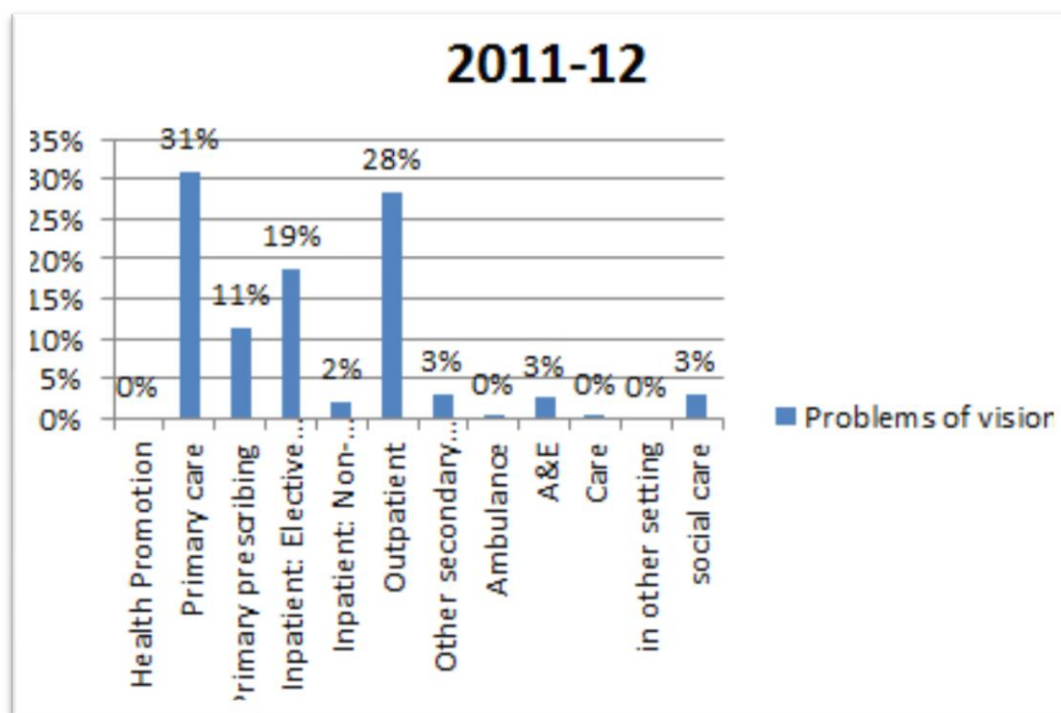
- £2.14 billion in direct health care costs, such as eye clinics, prescriptions and operations.
- £4.34 billion in indirect costs, such as unpaid carer costs and reduced employment rates.

In 2011/12, the National Programme Budget for 'Problems of vision' was £2.26 billion Total expenditure on eye health is increasing. The total cost is now 87% higher than it was in 2003/04.





For Walsall in 2011-12 the total expenditure on "Problems of Vision" was £11.45m with a significant spend on Primary care (including some towards DDRSS and the school vision screening), Outpatients, Elective Surgery and Primary Care Prescribing. There is however no spend on promoting Eye Health.



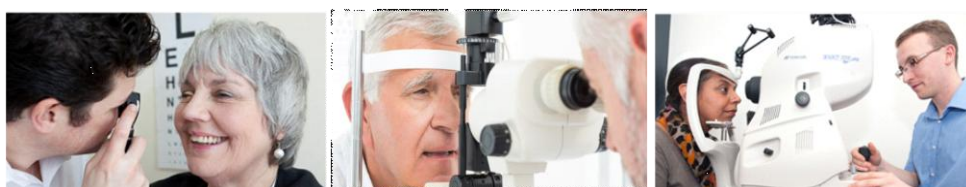


8. Public Perceptions of Eye Health

50% of sight loss (vision less than 6/12) is avoidable. This figure includes the number of people whose sight could be improved through refractive correction by wearing correctly-prescribed spectacles (53.3%), or with the right treatment at the right time at the right place. It takes into account sight loss that could be avoided by timely treatment of cataracts, glaucoma, diabetic retinopathy and certain types of age-related macular degeneration, following early diagnosis. However the public is not well-informed about the importance of eye health. A survey of 4,000 adults in the UK commissioned by the College of Optometrists in 2012 found that:

- only 35% of adults strongly agree that you can have eye problems without symptoms;
- 29% of UK adults have not heard of age-related macular degeneration (AMD), the most common cause of blindness in the UK; and
- 39% of people from black and minority ethnic (BME) backgrounds do not think that they are at higher risk of certain eye diseases due to their ethnic origin.

By implication, 65% of adults do not know that eye problems can occur without symptoms. This along with other views expressed in this survey suggests that there is a significant gap in the public's understanding of eye health and the need to have regular sight tests.





9. Recommendations

The following recommendations emerge from this Eye Health Needs Assessment:

1. Educate local people about eye care and encourage at risk groups to have regular eye tests with an Optometrist.

To facilitate this, recruit a Community Eye Health Promotion Group to include key stakeholders (e.g. ophthalmology, optometry, GP, Walsall Society for the Blind, Walsall Eyes, Manor Hospital ECLO, and Social Services), possibly funded jointly by Walsall Council and Walsall CCG, chaired by the Communications/Marketing Department of Walsall Council and/or CCG, and involving an independent optometric advisor. The remit of this group should be to:

Plan and deliver strong and regular social marketing/public eye health campaigns to the residents of Walsall to increase the awareness of eye health, to get the message across that sight loss is NOT a natural part of ageing, sight loss is avoidable, and to ensure early detection of sight loss and intervention where possible. This would specifically include activity to:

- a. Increase awareness about the importance and benefits of sight tests, and make people aware of who is entitled to free (NHS) eye tests especially to BME and over 60s. All approaches should be considered but local radio is understood to be more effective in reaching the BME community.
 - i. Appoint volunteer “Eye Health Ambassadors” from the provider professions to engage the local community about Eye Health and promote sight tests. These Eye Health Ambassadors should meet from time to time, to





exchange experiences, gauge success, and develop strategies to promote eye health in the local community.

- ii. Campaign for policy change to get visual impairment onto healthcare agendas for all older people, should be a priority
- iii. All current public health intervention strategies e.g.
 - a. Smoking cessation
 - b. Healthy eating
 - c. Reducing obesity.... etc.

..to include messages regarding the impact on sight, and eye care practitioners should be encouraged to signpost patients to relevant support initiatives.

2. Review access to optometry to ensure that older people in Walsall who are at risk from sight loss are able to get easy access to regular sight tests. This should include a more detailed survey of current locations of optometric practices, their opening hours, the services they provide to identifying gaps with a view to improving the service and access.

- i. Consideration should be given to create opportunities for optometrists to provide sight testing services within GP practices or adjacent to them in non retail settings
- ii. Consider contracting with a mobile optometry service provider to provide optometric services in settings/locations that do not have currently have easy access to optometry services.





- iii. Consider incentivising optometry contractors to open optometry practices in locations with poor/limited access to optometric services
 - iv. Address barriers to older people accessing eye tests
 - v. Promote the availability of domiciliary sight tests for house bound patients

- 3. Ensure that children and young people who are identified as having special educational needs (SEN) or learning difficulties have a routine sight test once a year. Similarly identify children and young adults with learning difficulties at an early age, and encourage them to have regular eye tests from an early age.
 - i. Every child to be encouraged to attend for a routine sight test before commencing school.
 - ii. Every individual with learning difficulties to be encouraged to attend for a sight test every year.
 - iii. All optometrists and carers to be signposted to use Seeability's resources for people with learning difficulties (www.seeability.org) including:
 - a. "Telling the optometrist about me" – completed by the person with learning disabilities and their carer to give to the optometrist, to guide the eye examination.
 - b. "Feedback from the optometrist" – completed by the optometrist to give the patient easy to understand results from their eye examination
 - c. "Functional Vision Assessment" – an easy to use checklist for carers to looks for signs of sight problems before an eye examination





- d. “If things go wrong” – an easy to read factsheet advising people with learning disabilities what to do if they feel unhappy with their eye test or glasses.

4. Eye care is not well-integrated with other aspects of healthcare, and potential referral routes. Therefore it is important to ensure that patient conditions/events/lesions associated with sight loss or increased risk of sight loss, are linked and patients referred for eye tests particularly patients with:

- i. Strokes
- ii. Learning Disabilities
- iii. Dementia
- iv. Falls
- v. Diabetes
- vi. Depression

.....and individuals living in Residential/Nursing Homes.

5. Older people normally do have some contact with healthcare professionals, e.g. pharmacists, dentists, nurses, GPs, physiotherapists, podiatrists, occupational therapists etc. Eye health and well-being should be raised at all/any of these encounters so that eye problems do not go un-recognised.

- i. Develop ways of integrating “eye-health” messages across different parts of the healthcare, charities for older people, and public sectors

Activities/interventions **1 to 5** listed above will result in an increased detection of eye problems initially but subsequently a reduction of visual





impairment amongst Walsall's population due to uncorrected refractive errors, undetected and untreated cataracts, AMD, glaucoma, diabetes and other vascular diseases. Only the social marketing activity will require funding with no actual funding of sight tests which are funded fully (uncapped) for eligible patients under the current arrangements of the General Ophthalmic Services (GOS) contract with NHS England.

6. Expand the role of primary eye care providers in Walsall based on evidence to create a seamless service, whilst reducing the burden placed on GPs and secondary care. To this end an Ophthalmology Services Redesign Forum to include stake holders (ophthalmology, optometry, GP, WSftB, Walsall Eyes, and Social Services) with an independent optometric advisor, with the remit based on referral activity evidence, to review and reconfigure, or introduce pathways and/or enhanced services to deliver more effective ophthalmic services to the Walsall community.

- a. Transferring ophthalmic patient care from the Hospital Eye Service (HES) to the community could provide better care for less serious cases and make better use of the limited capacity in secondary care for those with sight threatening conditions. However the current method of payment to secondary care may encourage the HES to accept any and all referrals, and there is an unfortunate incentive against improved triage of referrals in the community which may also encourage unnecessary follow up in HES and even failure to discharge patients.

- i. *There is no evidence from the audit of referrals that there are unacceptable levels of false positives referred to the HES from primary care practitioners. However*





community-based primary care practices are well placed to respond to the changing demographics and demands of Walsall by offering enhanced services, some of which have traditionally been provided as hospital-based outpatient services. It may be that some of these could be piloted subject to the need being established.

These include:

Cataract pre-and post-operative care

Early detection and intervention could reduce the prevalence of cataract by 10%, the UK government could save £3.1 billion annually (Ethical Strategies 2003)

Details of recommendations in Appendix III and IV

Glaucoma Referral Refinement

Not only reducing false positives by repeat contact tonometry, visual field analysis and optic nerve head assessment, but If only 10% of the glaucoma population received earlier treatment which arrested the development of visual impairment, this kind of programme could save the government between £555 million and £1 billion (Ethical Strategies 2003)

Details of recommendations in Appendix III and IV

Minor Acute Community Eyecare Services(MACES)

The provision of an enhanced service for community optometrists to triage all patients with eye problems presenting to local GPs with minor acute lesions





(Details in Appendix III and IV) Such schemes appear to work well in various parts of the UK.

Details of recommendations in Appendix III and IV

Ophthalmology Triage Centres in the Community

The introduction of a triage centres for all non-emergency/non-urgent referrals from primary care optometrists and GPs to reduce unnecessary referrals to secondary care and to manage minor acute eye lesions in the community. Such a scheme in Nottingham has proved to be very useful contributor to reducing unnecessary referrals to secondary care at a much lower tariff.

This scheme is similar to MACES save that the service would be provided in a specific triage centre and not necessarily an optometric practice

7. Revive the low vision services committee (LVSC) for Walsall and include representations from secondary care (ophthalmology), primary care (Local Optical Committee – optometrist), social and charitable organisations/service providers (Walsall Society for the Blind, Beacon Centre for the Blind, Walsall Eyes, social services, Sensory Inclusion services, Manor Hospital ECLO, and other stake holders). The remit of this group should include to:

- a. Map out review and revise the current pathway with a view to better publicise and utilise the services currently available.
- b. Develop a Low Vision Services Multidisciplinary pathway that integrates primary care community optometrists, general



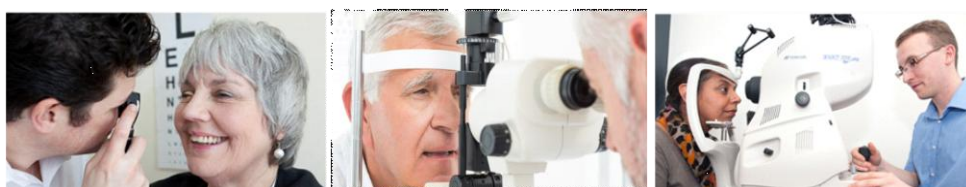


medical practitioners, secondary care practitioners and social services practitioners and other stake holders.

- c. Develop an Adult Community Optical Low Vision Pathway in Walsall - This would have the benefit of offering adults with sight loss, quicker access to a low vision assessment and support closer to home. Consider the feasibility of moving the provision of some Low Vision Services into the community.
- d. Recommend improvements to low vision rehabilitation services to enable visually impaired people to be as independent as possible by improving the accessibility and relevance of information for visually impaired people.
- e. Explore how to increase the amount of emotional support available at and after the point of diagnosis and improving access to mainstream work, training and recreational opportunities
- f. Review the certification of visual impairment and registration process, identifying how the process could be improved, and review how an electronic system could be implemented as a priority.
 - i. Support individuals to ensure that they complete the registration process where applicable.

8. The Digital Diabetic Retinopathy Screening Service (DDRSS) pathway already extensively involves community optometrists but appears to fail in meeting the 80+% minimum level cover of diabetics in Walsall expected of it.

- a. Once the current bid has been awarded a transition team will be established to hand over the service to the new service





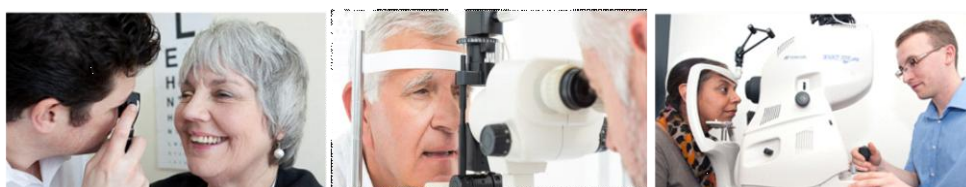
provider. It is important that any new provider is able to raise the DDRSS cover level to 80+% of diabetics in Walsall very quickly, and is able to include specific requirements in the contract to make this happen

- b. Serious consideration to give to improving access to DDRSS by introducing further locations for this at Streetly, Pheasey and Darlaston. It may be prudent to review the need to have two service providers for this service in Willenhall to cover greater catchment area of residents in Walsall.

- 10. Convene a multi-disciplinary group of healthcare and social care practitioners to agree and implement a falls strategy which covers both prevention of falls in people with sight loss and supporting those have experienced a fall.

10. At present the referral systems in community optometry are paper based. This is time consuming, cumbersome and information is often not transferred fully or accurately. Such paper referrals have been shown to suffer from incompleteness and unclear indication for referral (Lash 2003)..

- a. Many optometrists already have high-tech fundus cameras and other imaging equipment. Enabling electronic referrals and tele-optometry would increase the quality and value of referrals especially for posterior segment lesions. An electronic system would improve the processes and encourage optometrists to complete referrals more fully and reduce time spent completing paperwork. An electronic referral from for optometric practitioners to the HES is known to be safe, speedy, efficient,



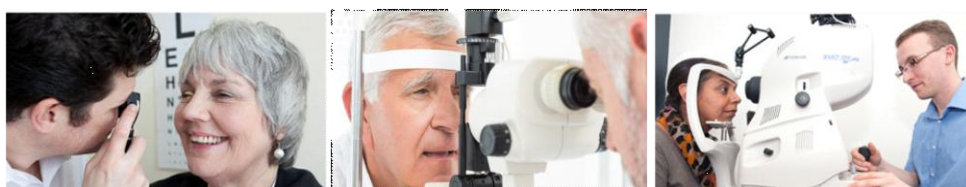


and clinically accurate and avoids unnecessary consultation in 37% of referrals (Cameron *et al* 2009). This approach to referrals by optometrists to GPs and HES in Walsall should be explored without delay.

11. The GOS sight test application form could be more effectively used to collect more useful information about the beneficiary of the test. Currently it does not record the ethnicity of the patient, and clinicians can fill in multiple reasons for eligibility for the NHS-funded sight test. Thus in a person who is both over the age of 60 and has diabetes, only one of these eligibility criteria is entered into the system. As a result very useful data from a public health perspective is not captured. In the same vein, when patients are referred for medical intervention, no indication is given regarding the reason (or provisional diagnosis) for the referral, on the GOS form. Without scope to audit referrals efficiently, it is difficult to identify patterns and trends and to effectively target scarce resources to improve eye health in the borough. A revised electronic version of the GOS suite of forms to address the lost opportunities to collect and analyse primary care data should be developed as a matter of urgency.

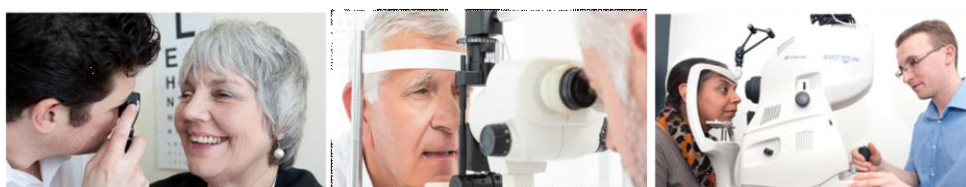
12. Critically review the ophthalmology services bought by the Manor hospital with a view to:

- i. Understanding the demands on both the outpatients and the in-patient services utilising the appointments data and establishing how these demands are met on a year to year basis.





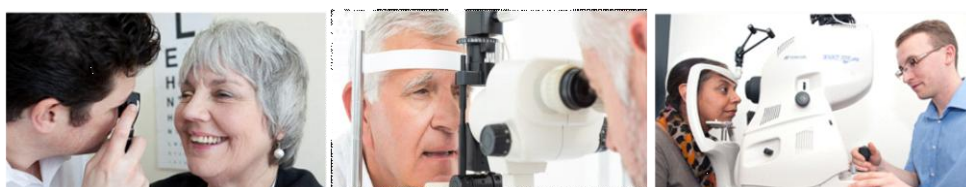
- ii. Establishing the current and future provision of ophthalmology services for Walsall residents and their adequacy.
- iii. Review capacity of specific clinics and the possibility of utilising optometry, orthoptic and nurse led clinics at the Manor.
- iv. Introducing Electronic Clinical Records for patients at both New Cross and Manor Hospitals to enable better understanding of the workload, the prevalence of eye lesions, the success and effectivity of medical and surgical interventions, and ultimately better delivery of eye care for Walsall residents.





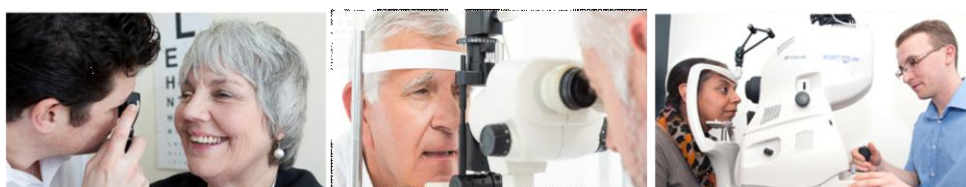
10. GLOSSARY

AMD	Age Related Macular Degeneration
BD8	Form used in the past by ophthalmologists to certify blind or partially sighted persons
BME	Black and Minority Ethnic
CCG	Clinical Commissioning Group
COAG	Chronic Open Angle Glaucoma
CVI	Certificate of Vision Impairment is the document signed by the ophthalmologist to identify someone as being 'sight impaired' or 'severely sight impaired'
DDRSS	Digital Diabetic Retinopathy Screening Service
ECLO	Eye Clinic Liaison Officer
EHNA	Eye Health Needs Assessment
GDP	Gross Domestic Product
GOS	General Ophthalmic Services
GPwSI	General Practitioner with Special Interest
HES	Hospital Eye Service
HSCIC	Health & Social Care Information Centre
IOP	Intra-ocular Pressure
JSNA	Joint Strategic Needs Assessment
LVSC	Low Vision Services Committee



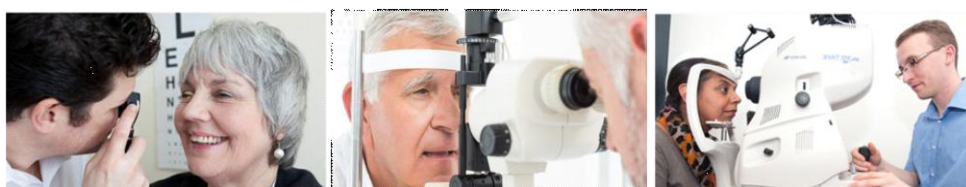


MACES	Minor Acute Community Eyecare Services
NEHEM	National Eye Health Epidemiological Model
NHS	National Health Service
NICE	National Institute for Clinical Excellence
NOD	National Ophthalmology Database
NSC	National Screening Committee
OHT	Ocular Hypertension
ONS	Office for National Statistics
OPDR	Ophthalmic Photographic Diabetic Retinopathy
OPwSI	Optometrist with Special Interest
PCT	Primary Care Trust
QUIPP	Quality Innovation Productivity and Prevention
RNIB	Royal National Institute for the Blind
ROP	Retinopathy of Prematurity
SEN	Special Education Needs
SI	Sight impaired is the term used to identify someone who has been assessed by an ophthalmologist as being 'so blind as to be unable to perform any work for which eyesight is essential'
Sight Loss	Unable to see better than 6/12
SSI	Severely sight impaired is the term used to identify someone who has been assessed by an ophthalmologist as being





	'substantially and permanently handicapped by defective vision caused by congenital (present at birth) defect, illness or injury'
VA	Visual Acuity is measured using an illuminated Snellen chart with usual aids if worn i.e. contact lenses or glasses ("presenting vision") or after full correction of refractive error ("best corrected visual acuity"). Normal VA is recorded as 6/6, which means that a person can see at 6 metres what a person with normal vision can see at 6 metres.
VEGF	Vaso-Endothelial Growth Factor
Vision	Visual Acuity without any correction of the refractive error i.e. no spectacles or contact lenses worn
VI	Vision Impairment is when a person has sight loss such that the level of vision is below that which the individual requires for their everyday tasks
WGOS	Walsall General Ophthalmic Services
WHO	World Health Organisation
WSftB	Walsall Society for the Blind





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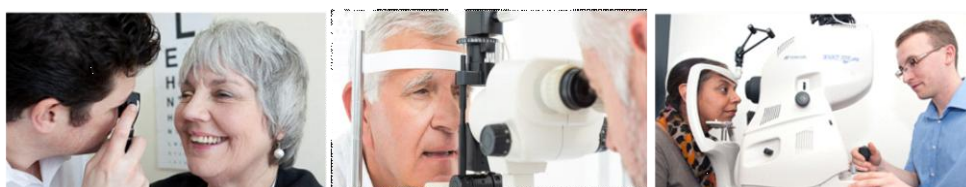
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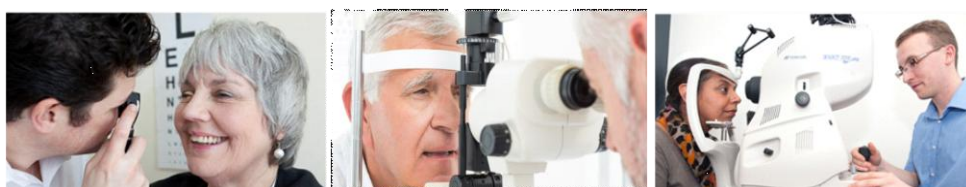
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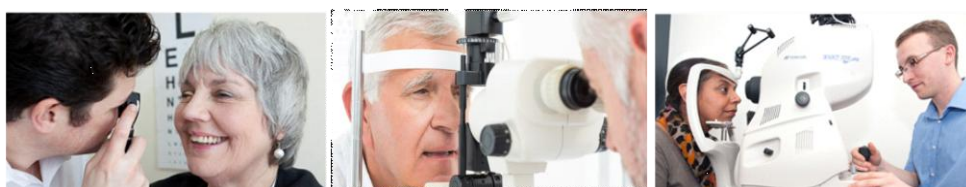
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APPENDIX I

Walsall GOS 18

Referral/ Notification Only (Delete as appropriate)

☐ Please contact the patient if they do not contact you or do not attend

NHS Number:		CONSULTATION DATE (dd/mm/yyyy):									
Patient Details											
Title: Mr/Mrs/Miss/Ms/Other				DOB:				Address:			
Surname:				Tel (H):							
First Names:				Tel (M):							
				Other:				Post Code:			
GP Details						Optometrist Details					
Name						Name:					
Address						Address					
E-Mail:						E-Mail:					
Tel:						Tel:					
Latest Spectacle Prescription											
Rx	Vision	Sph	Cyl	Axis	VA	Dist. Prism	PH Acuity	Add	Nr. Prism	Near VA	
RE										@	cm
LE										@	cm
Mydriasis			Intraocular Pressure (IOP)								
<input type="checkbox"/> Y <input type="checkbox"/> N			RE:		LE:		Time:		Contact		Non-Contact
V.Fields		RE:		Attached		Imaging		RE:		Attached	
Method:		LE:		Attached		Method:		LE:		Attached	
Salient Symptoms, Signs, History, Clinical Findings, Reason for Referral and Provisional Diagnosis											
Provisional Diagnosis:											
I agree that any practitioner to whom I am referred for medical consultation and/or treatment may make any information relevant to my eye condition and its treatment available to my optometrist. Signed _____ Date _____											
To GP		<input type="checkbox"/> For Review and management/refer as appropriate <input type="checkbox"/> Please refer to HES as indicated below									
		<input type="checkbox"/> Notification only - Not a referral									
To HES		<input type="checkbox"/> Ocular Emergency - to Hospital A&E Eye Service <input type="checkbox"/> Urgent - to HES within 1 week <input type="checkbox"/> Soon - to HES within 4 weeks <input type="checkbox"/> Routine - to HES within 12 weeks									
Suggested Clinic Type											
<input type="checkbox"/> Cataract		<input type="checkbox"/> Low Vision		<input type="checkbox"/> Orthoptics		<input type="checkbox"/> Paed. General Ophth		<input type="checkbox"/> Paed. Orthoptics			
<input type="checkbox"/> Cornea & Ant. Seg.		<input type="checkbox"/> Macula (ARC Wolves)		<input type="checkbox"/> Other Medical Retin		<input type="checkbox"/> Squint/Ocular Motil		<input type="checkbox"/> General Ophthalmology			
<input type="checkbox"/> Diab. Medical Retina		<input type="checkbox"/> Oncology (Diagnosed)		<input type="checkbox"/> Vitreo-Retinal		<input type="checkbox"/> (Not otherwise specified)					
<input type="checkbox"/> Glaucoma/OHT		<input type="checkbox"/> Oculoplastic/Orb./Lac									
Optometrist Name:						Date :					
Signature						GOC No: 01-					

Please obtain consent from the patient if not already given, and provide feedback to the referring optometrist Referral

Letter : Patient Copy Posted to GP Handed to Px to take to GP/HES Faxed to HES

WGOS18 Unshaded Excel.xlsx





APPENDIX II

NHS Walsall Referral Guide* for some Abnormal Ocular Conditions for Optometry

September 2011

(Not an exhaustive listing)

Monocular and patients with other risk factors may constitute a higher priority as will severity of symptoms and signs

EMERGENCY – Immediate/Same Day to New Cross Hospital's A&E Clinic

(Mon-Fri 8.30am to 6.30pm and Sat-Sun 8.30am-5.00pm – Call the advice line for A&E Clinic, New Cross Hospital, Wednesfield Rd, Wolverhampton WV10 0QP Tel: 01902695805 discuss your findings and then follow their advice. Outside these hours please call NHS Direct on 0845 4647 for advice.)

3rd Nerve palsy with pupil involvement
Acute Ptosis with Motility disorder
Anisocoria Fugax
Blebitis –suspected
BRAO – Acute
Chemical Injuries
CL Induced corneal infection
CRAO - Acute <12hrs
Corneal Graft Infection/rejection (oedematous graft)/reduced vision
Canalicular laceration
Eyelid lacerations
Glaucoma - Acute
Homer's - Acute (exclude life threatening complications)
Hyphema
Hypopyon
Herpes simplex keratitis – de novo
Infectious Keratitis
Pre- or post septal Orbital Cellulitis
Papilloedema
Periorbital infection with skin necrosis (necrotizing fasciitis)
Penetrating Injuries
Postoperative infection
Pre Retinal Hemorrhage/Vitreous Acute
Haemorrhage
Retinal Breaks and Tears
Retinal Detachment
Rubeosis
Sight Threatening Keratitis
Sudden Severe Ocular Pain especially associated with vision loss
Sudden Loss of Vision - Unexplained
Temporal Arteritis - Suspected (GCA)
Trauma/fracture
Uveitis – de novo
Vitreous haemorrhage
Vitreous Detachment Symptoms with pigment in the Vitreous – Shaffer's sign

URGENT – without undue delay (within 1 week) Via GP

3rd Nerve palsy without pupil involvement – de novo
4th Nerve palsy- de novo
6th Nerve palsy- de novo
Acute Paediatric Ptosis
Anterior Uveitis - known
Blunt Trauma

***WHEN IN DOUBT REFER!**

Bells palsy
BRVO
Comotio Retinae
CRVO with elevated IOP
Dacrocystitis
Dacroadentitis
Diplopia –sudden onset
Ectropion – with significant exposure keratitis
Epiphora with blood stained tears
Herpes simplex keratitis - known
IOP>30 mm Hg
Incomitancy – de novo
Lacrimal sac mass - non-compressible
Proptosis with corneal exposure
Retinoblastoma
Retinopathy
Proliferative Diabetic Retinopathy
Retrobulbar/Optic Neuritis
Squamous Cell Carcinoma
Scleritis
Trichiasis with corneal fluorescein staining
Vernal keratoconjunctivitis
Viral keratoconjunctivitis
"Wet" Macular Degeneration (especially if new and vision better than 6/6 – refer via GP immediately to Acute Referral Clinic (ARC) - using Walsall GOS18. If not practical then call ARC discuss your findings and then follow their advice ARC Tel: 01902 695805)

Useful Telephone/Fax Numbers

A&E
New Cross Hospital,
Wednesfield Road,
Wolverhampton, WV10 0QP.
Tel 01902 695805

Acute Referral Clinic
New Cross Hospital,
Wednesfield Road,
Wolverhampton, WV10 0QP.
Tel 01902 695805

SOON – within 4 weeks via GP

Basal Cell Carcinoma
Central Serous Retinopathy
Chalazion
Chronic proptosis without corneal exposure/visual dysfunction
Conjunctival cysts or Inclusions giving rise to Discomfort
CRAO>12 hrs old
CRVO with normal IOP
Diabetic maculopathy
Disc Hemorrhage
Dry Eye – severe with rheumatoid arthritis
Entropion
Ectropion
Episcleritis
Exophthalmos/Proptosis
Gradual onset diplopia

Melanosis of lids -Changed
Macular oedema
Pre-Proliferative Diabetic
Suspected choroidal melanoma
Suspected Iris lesion
Trichiasis without corneal fluorescein staining

ROUTINE – within 12 weeks via GP

Adult Ptosis
Asteroid Hyalosis/Synchisis
Scintillans(Confirm Dx)
Argyll Robertson (Confirm Dx exclude complications)
Chronic Horner's (Confirm Dx exclude complications)
Epiretinal membrane
Floppy eyelid syndrome
Hayfever conjunctivitis in juveniles
Holms-Aldies (Confirm Dx and rule out complications)
Hollenhorst plaques
Hypertensive Vessel Signs (and Diastole of >100 mm Hg to GP)
IOP >22mm Hg and <30mm Hg
IOP > 5mm Hg difference between eyes with no other abnormal findings
Keratoconus
Lattice degeneration – with atrophic round holes but no tears
Lens opacities, which visually disable Px
Macular Hole <12 mo old
Myasthenia Gravis
Dry macular degeneration that visually disables the Px for Registration
Naso-Lacrimal duct obstruction
Optic disc pallor
Optic disc pits
Persistent dry eye
Persistent blepharitis
Persistent conjunctivitis
Persistent Meibomian, Zeiss and Moll Cysts
Persistent epiphoria with recurrent conjunctivitis
Pigment Dispersion Syndrome
Previously undiagnosed field defects (repeatable)
Pterygium Inflamed/threatening the visual axis/active
Pseudoexfoliation with raised IOP
Ptosis
Pupillary defects
Retinal haemorrhage
Retinitis Pigmentosa
Retinoschisis
Significant corneal dystrophy
Suspicious cupping
Subconjunctival Haemorrhage - recurrent
Vernal conjunctivitis





APPENDIX III

Optometrists and GPs with Special Interest in suitably equipped practices can provide a range of enhanced services within primary care, providing value for money and bringing four key benefits:

- shorter waiting lists;
- shorter waiting times;
- greater patient convenience;
- more effective use of both primary and secondary care resources.

Cataract:

- To review the current arrangements for pre and post-cataract surgery evaluations.
- Focus on Cataracts (2008) has suggested that all routine aftercare of post cataract operations for patients could be conducted in the community by suitably accredited optometrists thus avoiding one or more follow-up visits at the HES (Appendix IV). Such a scheme has been piloted and deemed successful, and is now routine in Stockport and has been well received (Warburton 2000).

Glaucoma:

- To introduce a community based Glaucoma Referral Refinement enhanced scheme to reduce false positives to the hospital eye service and better utilise the community optometrist resource to ensure prompt, effective and appropriate referral for all glaucoma and OHT suspects. Such a scheme should involve the assessment of both form and function of the eyes. In some parts of the country this has resolved due to the NICE guidelines into repeat intraocular pressure (IOP) and repeat Visual Field Analysis. Glaucoma Referral





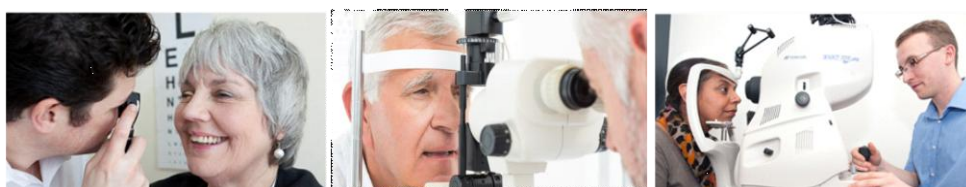
Refinement in the community has been shown to be effective without compromising quality (Bourne *et al* 2009).

- To develop a cohort of appropriately qualified optometrists with a view to enable an enhanced service to be provided for diagnosis and management of POAG and OHT in the community. Currently this would require optometrists to train and qualify by examination of the College of Optometrists to be awarded the Professional Certificate, Higher Certificate and Diploma in Glaucoma (DipGlau) – for Independent Management of Glaucoma.

Minor Acute Community Eyecare Services (MACES):

- To consider the provision of an enhanced service for community optometrists or GPwSI to triage all patients with eye problems presenting to local GPs with any of the following (Appendix IV)-
 - Sudden or recent reduction in vision in one or both eyes
 - Red eye(s)
 - Pain and/or discomfort in the eyes, around the eye area or temples
 - Flashes and/or recent floaters
 - Mild trauma
 - Suspected foreign body
 - Recent onset of double vision
 - Significant recent discharge or watering of the eye

The following conditions are excluded and would require the patient to attend an ophthalmic hospital (which includes an ophthalmic





department of a hospital) casualty or accident and emergency department ("hospital eye services")

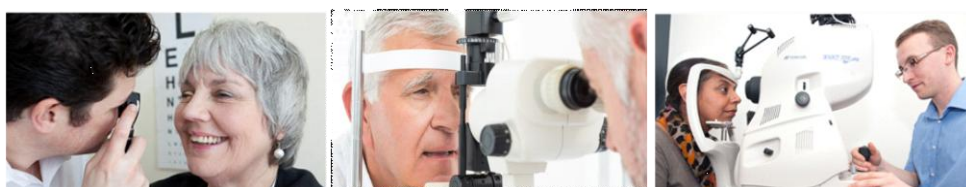
- Sudden loss of vision
- Very significant eye pain
- Significant trauma
- Chemical burns

Audit of a similar scheme provided through optometric practices in Glasgow (DoH 2007) found that :

- All referrals were seen within 2 weeks and 90% within 4 days.
- 77% of patients were retained and safely managed in primary care.
- All referrals to the HES were considered appropriate by the receiving ophthalmologist.
- There has been an 80% reduction in topical antibiotic prescribing.
- There has been a high patient and professional satisfaction rating.

Audit of another scheme provided through GPs premises in Shipley (DoH 2007) found that:

- Waiting time was two weeks.
- Around 75% of patients did not need to be referred to the HES.
- An audit of the first 100 patients revealed that the 60 patients who were not referred on to hospital, did not go on to have



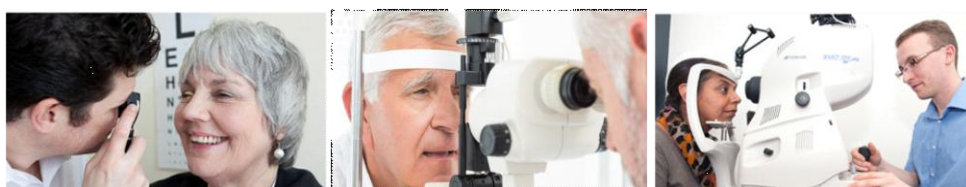


any complications related to their initial consultation (based on follow up 2 years later).

- The scheme made some modest cost savings.
- There is a high satisfaction rating amongst patients and GPs.

Audit of the ACES scheme in Somerset which is the basis for the MACES scheme, has so far found that in the 29 practices currently contracted to provide the service (Hernshaw 2010):

- There were approximately 250 first appointments per month since September 2009 (Total 1337 since service launch) in optometric practices
- Red eye and flashes and floaters were the main reasons for presentation
- 68% patients had self referred into the service to date
- 70% of patients were managed entirely by optometrists
- Only 7% of first appointments attracted a follow-up
- To consider the provision of an enhanced service scheme for community optometrists as above, but with the option of NHS prescriptions for therapeutic interventions with arrangements with local GPs and /or pharmacists.

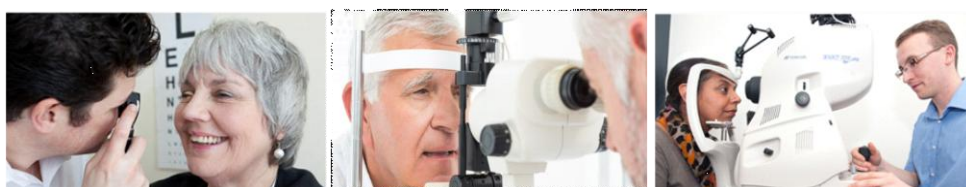
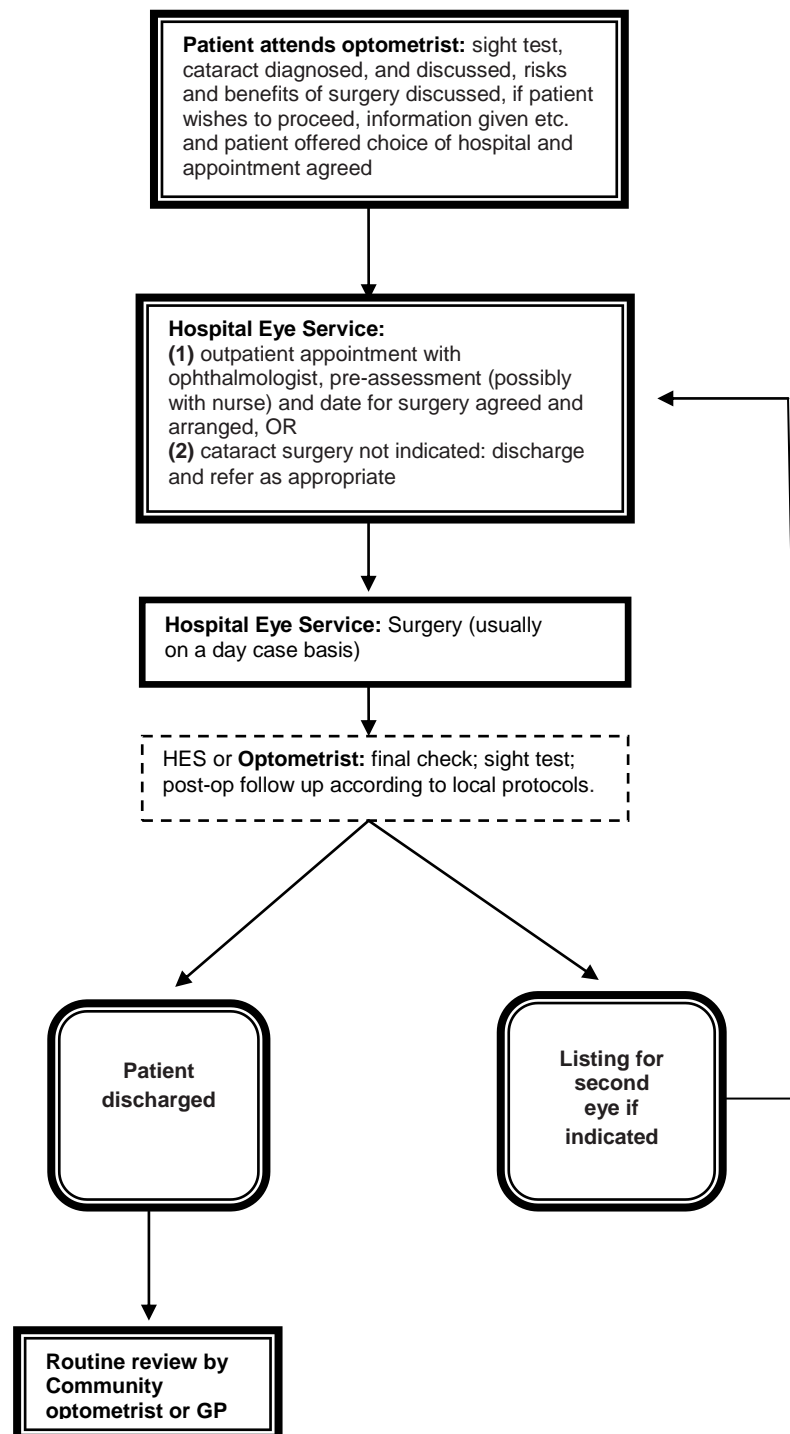




APPENDIX IV

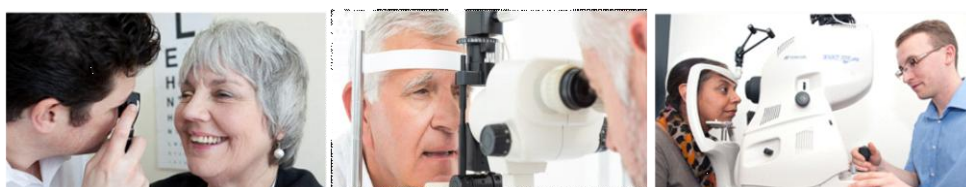
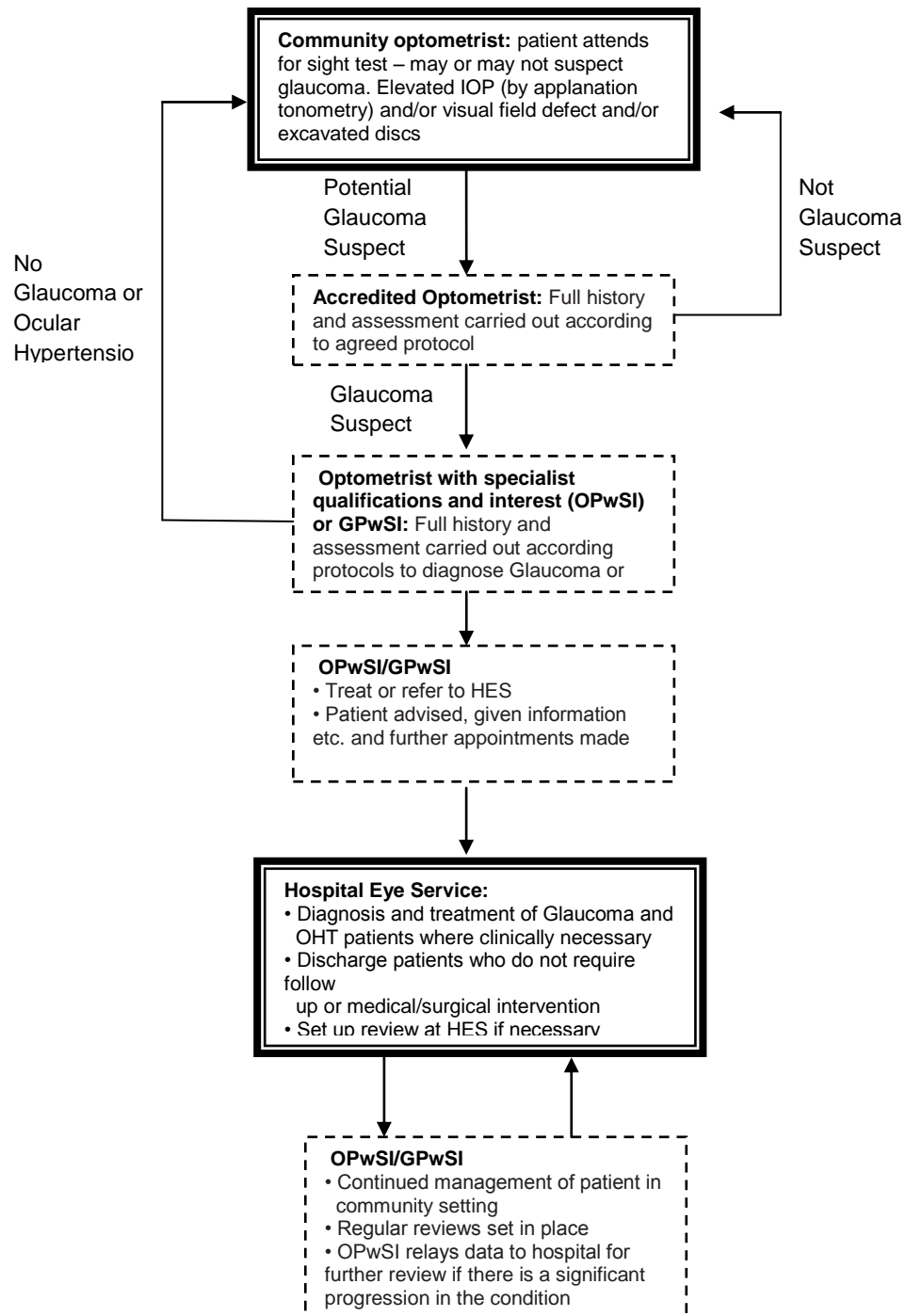
Dotted line suggests potential opportunity for primary care practitioner intervention

Potential Cataract Pathway





Potential Glaucoma Pathway





Potential Minor Acute Community Eyecare Services Pathway (MACES)

