Wirral JSNA: Eye Health (Adults)

Summary

- Wirral has an ageing population and as a consequence there is potential for increased demands on local eye services and any related support as the prevalence of the major eye conditions likely increases
- People living with sight loss can struggle with everyday tasks such as mobility and travel, reading, writing and using new technology
- More than 2 million people in the UK could be living with some form of sight loss
- It is suggested that 50% of sight loss is avoidable if detected and treated early enough – prevention services and health promotion messages play a major part in meeting this need
- Costs (direct or indirect) associated with sight loss are suggested to be over £.6.5 billion a year for the UK and over £16 million for Wirral
- A range of health related issues that impact and are impacted upon by sight loss – these include smoking, obesity, stroke, hypertension, dementia, falls and mental health/depression
- People living on low incomes and in areas of deprivation can be more at risk of sight loss as there is a tendency not to have regular eye tests and/or access support services
- Other groups at risk of sight loss and eye health issues are those people with a learning disability and people from a black and minority ethnic group (for a specific eye conditions),
- Wirral has over 10,000 people (estimate) living with some form of sight loss, or almost 3.5% of the local population and this is estimated to rise to almost 15,000 by 2030
- Wirral performs worse than England and other Merseyside and North West areas for Age related Macular Degeneration, Glaucoma and sight loss registrations but has a lower rate of diabetic eye disease.
- Early detection is key to avoidable sight loss and costs for future care. However figures suggest that only 2 in 5 over 60s and 1 in 4 children and young people had a NHS eye test in 2012/13
- Local commissioners are working with service providers, vested interest organisations and local people to maintain and develop current and future eye health services
- Local support services and care pathways provide vital links for people seeking diagnosis and support

Contents

What do we know?

Overview

The lack of good vision care impacts on other aspects of health such as the ability of patients to manage other chronic conditions and the avoidance of injurious falls. People with visual impairment are more likely to require residential and community care and additional support through adaptations of their environment. Such support and the loss of quality of life incur considerable costs both to the individual and society.

Eye conditions that lead to visual impairment (i.e. partial sight or blindness) but if detected they can be preventable if diagnosed and managed appropriately. The RNIB have determined that 53% of blindness may be prevented with suitable intervention and treatment.

Bunce et al (2010) suggests the main causes of permanent visual impairment have been identified as age related macular degeneration (AMD), glaucoma and diabetic retinopathy. Cataracts and uncorrected refractive error also cause registrable levels of visual impairment which may be resolved with appropriate treatment. All of these conditions, with the exception of diabetic retinopathy are covered in this document. Previous retinopathy reports can be accessed here

Definitions for the eye conditions discussed in this document can be accessed here

Partial sight and blindness can impair:

- the sharpness or clarity of vision (visual acuity)
- the ability to detect objects to either side, above or below the direction in which we are looking (visual fields)
- Our ability to detect contrast and see colours.

Measuring sight loss (using a 'Snellen Chart')
In the UK blindness (*severe sight impairment*) is defined as 3/60 (being able to see at 3 metres what someone with normal vision can see 60 metres away).

Partial sight (*sight impairment*) is defined as 6/60 (being able to see at 6 metres what someone with normal vision can see 60 metres away).

Both of these measures are taken with the best corrected vision where corrected vision is when wearing spectacles or contact lenses. Having a reduced visual field is also taken into account for registration as this can have a significant effect on vision.

Sight loss can therefore be described as when reduced vision cannot be corrected using spectacles or contact lenses. Further information about the identification of sight loss and the definitions can be found on the NHS Choices website.

Definitions for the eye conditions discussed in this document can be accessed here

Facts and figures

People with even moderate levels of visual impairment often struggle to do simple everyday tasks such as dressing, or accurate administration of medication and require additional support. Indeed it has been noted in a US study that patients with visual impairment are three times more likely to have difficulty managing their medications than those patients who have normal vision (US Department of Health and Human Services, 1994). Visually impaired people of working age are less likely to be in employment (Douglas et al 2006). Older visually impaired people are more likely to become isolated and have depression (Evans et al 2007). Even with only moderate visual impairment, postural stability is reduced as it is estimated that visual information contributes about 50% of the information required for this function (Pyykko et al 1990). Consequently, older visually impaired people are more likely to fall and have injuries such as hip fractures (Scuffham et al 2002).

Key national data

- Almost two million people in the UK are living with sight loss (Access Economics 2009)
- Over 50% of sight loss can be avoided (Access Economics 2009)
- Sight loss affects people of all ages as we age we are increasingly likely to experience sight loss (Access Economics 2009)
- Nearly half of blind and partially sighted people feel 'moderately' or 'completely' cut off from people and things around them (Pey, Nzegwu and Dooley, 2006)

Further information about sight loss can be found from the Action for the Blind website.

The *Sight Loss Statistics* (RNIB, 2013) document also contains further information and can be downloaded here.

Costs of sight loss and financial impact on people with sight loss

In 2009, the RNIB published the campaign report 'Cost Oversight' this identified the following key messages:

- Sight loss is expensive. In 2008 the costs of sight loss was £6.5bn. This figure includes £2bn in direct costs (hospital treatment, optometry treatment etc.) and £4.5bn in indirect costs (premature mortality and informal care costs etc.). This annual figure could rise by a further £15bn to a total of £22bn if the 'burden of disease' costs are included.

- Spending more on early detection and treatment is likely to reduce the costs of sight loss especially in glaucoma.

- Improving access to eye care services for minority ethnic groups is the most cost-effective way of promoting eye health.

- In the year 2011/12 Department of Health Programme Budgeting Data showed that Wirral PCT spent £16.2m on problems of vision at 2.5% of total expenditure.

- Action for Blind estimate that based on 2011 Census population of Wirral, as approximately 319,300, gives an approximate spend on problems of vision of £50.07 per head of population

These figures would therefore suggest that spend on problems of vision - both in terms of total spend per head of population and as a percentage of overall expenditure - is likely to increase. Projecting an average increase in expenditure of £4million per year, by the year 2015, expenditure on problems of vision could reach £40million nationally.

Sight loss and health determinants

Sight loss cuts across health boundaries and does not exist in isolation. This presents opportunities to effect treatment and support much earlier by embedding checks and balances in a number of different health and social care environments. This could both prevent sight loss and save money. Some of this crossover is illustrated below.

Smoking

The link between smoking and Age related Macular Degeneration (AMD), the UK's leading cause of blindness, is as strong as the link between smoking and lung cancer. According to AMD Alliance (2005) smokers not only double their risk of developing AMD but also tend to develop it earlier than non-smokers. Furthermore, smoking can make diabetes-related sight problems worse, and has been linked to the development of cataracts.) Research has shown that cessation programmes which link sight loss and smoking provide a motivation for people to reduce or give up smoking.

Obesity

Obesity has been linked to several eye conditions including cataracts and AMD. RNIB 2006 suggests that Obesity also has a strong link to diabetes and an exacerbation of sight deterioration in diabetic retinopathy.

Stroke prevention

Damage resulting from stroke can impact on the visual pathway of the eyes which can result in visual field loss, blurry vision, double vision and moving images. In addition there may be inability to read (alexia) or to write (agraphia).

Around 60 per cent of stroke survivors have some sort of visual dysfunction following stroke. The most common condition is homonymous hemianopia, a loss of half a person's visual field, which occurs in 30 per cent of all stroke survivors. Further information can be found here

Wirral's current JSNA indicates an increased number of stroke survivors living with resulting disabilities and a number may experience some form of sight loss.

Blood Pressure /Hypertension

In addition to increasing the risk of stroke, The Eye Disease Case-Control Study Group (1996) highlight that uncontrolled high blood pressure increases the risk of both retinal vein and retinal artery occlusion. Both conditions can cause sudden loss of vision in one eye and can lead to further complications. Further information can be found here.

Dementia

A Thomas Pocklington Trust paper (2007), based on the review of research work conducted by Professor Roy Jones and Dr Richard Trigg at the Research Institute for the Care of the Elderly suggested that at least 123,000 people in the UK have both dementia and serious sight loss. Most are aged over 65 and, among everyone of that age, normal ageing of the eye will reduce their vision to some extent. As the population ages an increasing number of people will experience both dementia and sight loss. Wirral's JSNA Mental Health Chapter recognises managing dementia is a key priority.

Falls
A recent review of evidence on the link between falls and sight loss by Boyce et al (2013) found that almost half (47 per cent) of all falls sustained by blind and partially sighted people were directly attributable to their sight loss. They go onto suggest that on average, the estimated medical cost of falls nationally is £269 million. Of the total cost of treating all accidental falls in the UK, 21 per cent was spent on the population with visual impairment.

Based on Boyce et al (2013) work they estimate that 8 per cent of falls that result in hospital admissions could be attributed in individuals with visual impairment costing 21 per cent of the total cost of treating accidental falls;

In actual numbers, there were 5,577 falls in those aged 60+ during 2012/13. A fall was the injury most likely to be sustained by older people in Wirral attending A&E (73% of all injuries seen at Arrowe Park were falls). Falls resulting in hospital admission totalled 2,584 in 2011/12. Using the formula from Boyce et al, it suggests that 207 falls occurred in individuals with visual impairment. See Falls (Older People) section of Wirral JSNA here

Depression
Evans et al (2007) highlight that older people with sight loss are almost three times more likely to experience depression than people with good vision. Ensuring that blind and partially sighted people have access to emotional support and counselling services can reduce the risk of depression and mental health problems. Referral routes into services can also be developed in conjunction with existing providers and local sight loss charities.

Diabetic screening
Public Health England estimates that in 2012 7.7% of those age 16 and over in Wirral are living with (diagnosed and undiagnosed) diabetes. If current trends in population change and obesity persist the total prevalence of diabetes is expected to rise to 8.5% by 2020 and 9.3% by 2030. Regular retinal screening can prevent future loss of vision as a result of diabetes.

Sight loss and other determinants

Regular eye tests
Greater public awareness is needed of the importance of regular eye tests. These should be seen as an eye health check, as opposed to merely a sight test, as other health implications can also be picked up by an eye test. 50% of sight loss is avoidable and regular eye tests are key to prevention.

Socio-economic considerations
Evidence from RNIB (2004) shows that there is a link between people on low incomes and living in deprivation and people living with sight loss; three out of four blind or partially sighted people are living in poverty or on its margins and generally show lower take up of eyecare services. Wirral has a significant population on a low income as well as high levels of differential between those on high and those on low incomes.

Deprivation
Populations where there are multiple deprivation indicators, according to Fraser *et al* 2001, have been shown to be more likely to present with eye disease later than others. This increases the risk of sight loss in deprived areas. The exploration of the effect of deprivation on presentation and whether the population of deprived areas is accessing services is more difficult. Maps are available showing where deprivation exists within each local authority area based on multiple indicators of deprivation. However; corresponding data that would highlight whether people in these areas are accessing services when needed is not readily available.

Learning disability
According to Emerson and Robertson (2011) there is a high prevalence rate of sight loss amongst adults with learning disabilities. Nearly one in ten adults with learning disabilities is blind or partially sighted. Adults with learning disabilities are 10 times more likely to be blind or partially sighted than the general population.

Data on the number of people with a learning disability and the number of those that are registered as blind or partially sighted could be reviewed. If a disparity is shown between the numbers of people with learning disability that are registered blind or partially sighted compared to prevalence levels it may indicate that some targeted work needs to be undertaken. In Wirral there are 45 people registered blind or partially sighted who are also noted to have an additional learning disability.

Ethnicity
Ethnicity is a factor in some forms of visual impairment. Unfortunately, most studies of minority ethnic groups and their health in the UK have not collected data about partial sight and blindness. (Johnson and Scase, 2000). Two studies made a rigorous attempt to synthesis available information and quantify the relative risk of different ethnic groups to the common eye diseases (NEHEM and FSUK). They cover:

Glaucoma
- Black people have four times greater risk of glaucoma than white people – a difference which is also borne out in American studies. (Wormald et al, 1994), (Minassian and Reidy (2009).
- People from South-East Asia and China are at higher risk of angle-closure glaucoma (Salmon, 1999)

Cataracts
- Asian people have a higher risk of developing cataracts than black and white people (Kempen et al 2004; Das et al 1994).
- The much higher prevalence of cataract in Asian people aged less than 60 years suggests an earlier onset of the disease.

Diabetic eye disease
- African, African Caribbean and Asian people are at a higher risk of developing diabetic eye disease, compared to white people (Kempen et al 2004; Das et al 1994).

Age related Macular Degeneration (AMD)

- Black people have a greater risk of developing AMD compared to white people in younger age groups, whereas white people have greater risk of developing AMD later in life;
- Asians are at lower risk than white people of AMD (Friedman et al 2004; Das et al 1994).

Refractive error

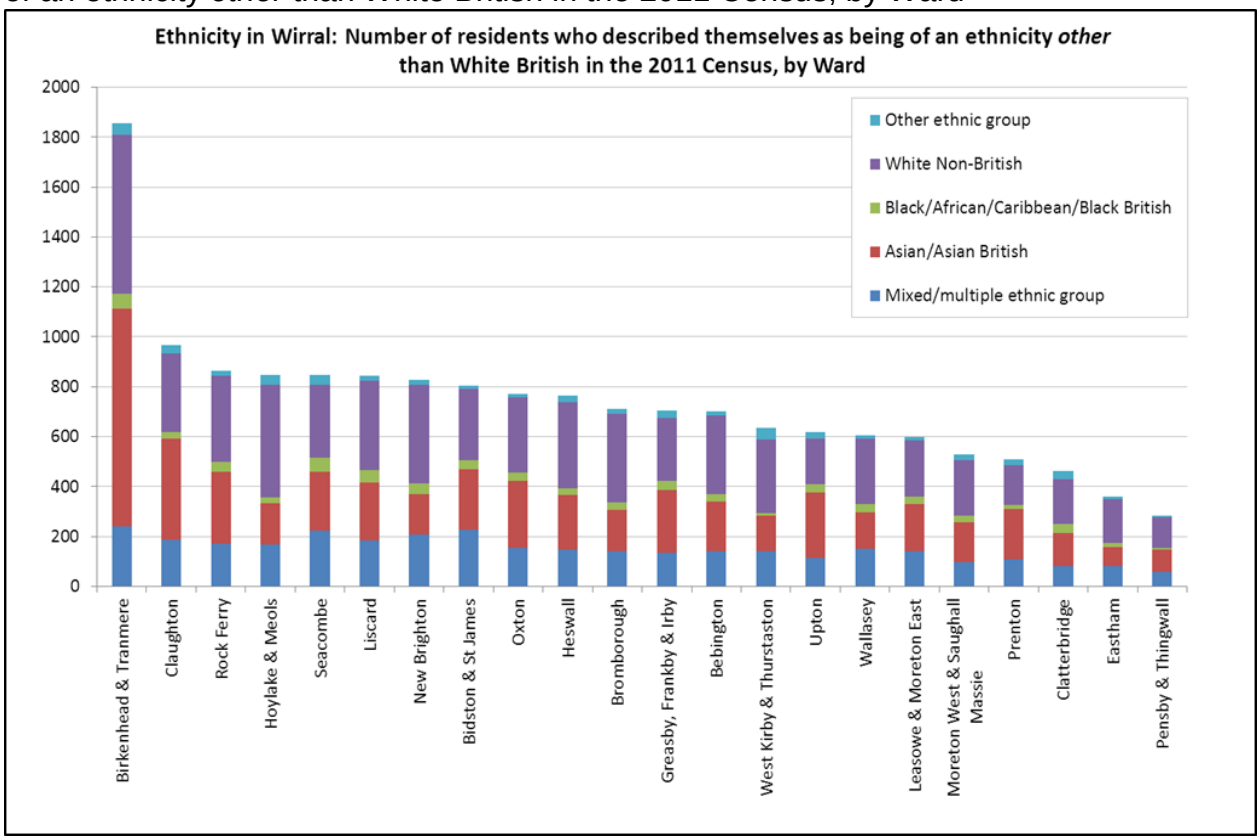
- White people have a greater risk of developing refractive error than black people (Kempen et al 2004).

Other eye diseases

- For other eye diseases, no clear ethnic differences in risk have been found (Munier et al 1998; Ghafour et al 1983).

The 2011 Census recorded 319,837 people living in Wirral, of whom 303,682, or almost 95%, were white British. It further suggests that 5.03% of Wirral's population is from a BME group (i.e. not white British) which compares to 3.46% in 2001, or from 10,900 people in 2001 to 16,101 people in 2011. The figure 1 below shows the ethnic minority populations and breakdown in each Wirral ward (also see Wirral JSNA BME chapter here).

Figure 1: Ethnicity in Wirral: Number of residents who described themselves as being of an ethnicity *other* than White British in the 2011 Census, by Ward



Source: ONS 2011 Census (Data release 2013)
Note: broad ethnic groupings are constituted as follows:
(Mixed – Arab and any other ethnic group) (Mixed/multiple ethnic group - Mixed/multiple ethnic group – other mixed, White and Black African, White and Asian, White and Black Caribbean) (Asian/Asian British – Chinese, Other Asian, Bangladeshi, Indian, Pakistani) (Black/African/Caribbean/Black British – African, Other Black, Caribbean) (White Non-British – Irish, Gypsy or Irish Traveller, Other White)

- Here the predominant ethic groups in the Birkenhead & Tranmere ward (ward with highest ethnic group population) are Asian/Asian British and white non-British.
- The proportion of those groups highlighted in figure 1 is generally similar across all wards with the exception of Hoylake & Meols where the proportion of white non-British is higher than other wards.

Local context

The RNIB Sight loss data tool can be used to provide an estimate of the number of people with sight loss in Wirral.

Table 1 - Wirral registrations and certifications

Query	Wirral
Certification* and Registration**	
Total number of people registered blind (2011)	**1,155**
Total number of people registered partially sighted (2011)	**1,355**
Total number of people registered as blind or partially sighted	**2,510**
Rate of registration per 100,000 population	**785/ 100,000**
Number of people newly certified as Severely Sight Impaired (blind) in 2011/12	**85**
Number of people newly certified as Sight Impaired (partially sighted) in 2010/11	**131**
Total number of Certification of Vision Impairment in 2011/12	**240**
Rate of Certifications of Vision Impairment* issued per 100,000 population in 2011/12	**75.0/100,000**
Percentage change in rate of CVIs per 100,000 from 2010/11 to 2011/12	**Up 6.9%**
Living with Sight Loss	
Estimated number of people living with sight loss in 2011	**10,840**
Percentage of people living with sight loss compared to overall population in 2011	**3.39%**
Estimated number of people predicted to be living with sight loss in 2020	**12,200**
Percentage of people living with sight loss compared to overall population in 2020	**3.83%**
Estimated number of people predicted to be living with sight loss in 2030	**14,770**
Percentage of people living with sight loss compared to overall population in 2030	**4.52%**

Source: RNIB (2014) http://www.rnib.org.uk/knowledge-and-research-hub-key-information-and-statistics/sight-loss-data-tool

Notes: * A Certification of Vision Impairment (CVI) formally certifies a person as either sight impaired (partially sighted) or severely sight impaired (blind). Each CVI form is completed by a consultant ophthalmologist in an eye clinic, with a copy sent to the local social services department and providing a formal route to social care services. ** Upon receipt of a completed CVI form, the social services department offer registration and other relevant advice and support. Registers of blind and partially sighted people are maintained by all local authorities to help them plan and deliver services.

As table 1 describes, of the 2,510 people who are blind or partially sighted in Wirral, there are 1,155 people registered as blind or severely sight impaired and 1,355 people registered as partially sighted or sight impaired. A total of 1935 of all people (77%) on the register are over 65 + years with 1,680, or 67%, being over 75 years.

Registration with the local authority is dependent on certification and is voluntary. The majority of those eligible for registration do agree to be registered. However, sight loss primarily remains undetected (stigma, lack of awareness and inconsistent ad hoc systems for processing certification and registration documents in the pathway are some of the key reasons for this). The registration and Certificate of Visual Impairment (CVI) figures are likely an under representation of the true sight loss picture.
The visually impaired register for Wirral is held within the Sensory Services as part of the Adult Services Directorate.

The Visual Impairment (VI) Team in Wirral Council receives approximately twenty newly registered referrals per month as 'sight impaired' (partially sighted) or 'severely sight impaired' (blind). The majority of the CVI's coming from Arrowe Park Hospital Eye Clinic or Liverpool St Pauls Eye Clinic.
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The Visual Impairment Team received 487 referrals in 2012/13 which rose to 553 referrals for 2013 to March 2014. In 2013/14 this rose to 251 being Certificates of Vision Impairment compared to 245 in 2012/13. Further information about the Certificate of Visual Impairment (CVI) can be found here

Local service numbers (registered)

The sight loss data tool identifies that there are approximately 10,840 people in Wirral living with sight loss. However, this could be much higher due to discrepancies of reporting certification of people with sight loss.

- Wirral Society of the Blind and Partially Sighted, based at Ashville Lodge in Birkenhead, currently has approximately 3,000 people on their database.
- Henshaws Society for the Blind has currently 50 – 100 Wirral adults and children accessing their services every year.
- Action for Blind People was working with 70 Wirral adults and 9 Wirral children in 2012/13.
- RNIB has 54 Wirral members and supports 130 Wirral residents with talking books services.

Trends

Future prevalence of sight loss, population, major eye conditions and optometry

National context
The prevalence of sight loss increases with age and the UK population is ageing. One in five people aged 75 and over and one in two people aged 90 (and over) are living with sight loss in the UK. Work by RNIB (2006) using the 2011 Census suggests that 4.5%, or approximately 2.3 million people, are over 75 with approximately 545,845 (23.7%) will experience visual impairment.www.poppi.org.uk

Access Economics (2009) have predicted that by 2050 the number of people in the UK with sight loss will increase with the number with sight loss set to double to nearly four million.

Minassian and Reidy (2009) produced on behalf of RNIB the report Future Sight Loss UK 2: An epidemiological and economic model for sight loss in the decade 2010-20 The key findings for this report were as follows;

- 1.5 million people estimated to have early age-related macular degeneration (AMD – the most common cause of sight loss in the UK) in 2010. The total cost of AMD was estimated to be £1.6 billion a year
- Over 389,000 people had cataract surgery in 2010. The total cost of cataract treatment was estimated to be £995 million a year
- More than 748,000 people estimated to have background Diabetic Retinopathy (DR). 188,000 people have Diabetic Maculopathy, which is a more advanced stage of DR that can lead to sight loss. The total cost of DR was estimated to be £680 million a year
- 266,000 people in 2010 are estimated to have glaucoma. The total cost of glaucoma was estimated to be £542 million a year

Wirral population and future growth

Given that acquired sight loss is age related any changes in the population of Wirral in the near future are important to understand. This will help us to consider the impact on sight loss services and planning. Population details can be seen in tables 2 and 3.

Table 2: Wirral Mid-Year Population Estimates by age group and gender, 2013

Age Band	Males		Females		Persons	
	Number	%	Number	%	Number	%
0 to 4	9,670	6%	9,264	6%	18,934	6%
5 to 9	9,525	6%	8,995	5%	18,520	6%
10 to 14	9,194	6%	8,840	5%	18,034	6%
15 to 19	9,975	6%	9,221	6%	19,196	6%
20 to 24	8,763	6%	8,822	5%	17,585	5%
25 to 29	8,870	6%	9,552	6%	18,422	6%
30 to 34	8,613	6%	9,121	5%	17,734	6%
35 to 39	8,193	5%	9,131	5%	17,324	5%
40 to 44	10,498	7%	11,288	7%	21,786	7%
45 to 49	11,292	7%	12,456	8%	23,748	7%
50 to 54	11,305	7%	12,148	7%	23,453	7%
55 to 59	10,004	6%	10,614	6%	20,618	6%
60 to 64	9,970	6%	10,337	6%	20,307	6%
65 to 69	9,519	6%	10,139	6%	19,658	6%
70 to 74	6,785	4%	7,926	5%	14,711	5%
75 to 79	5,374	3%	6,685	4%	12,059	4%
80 to 84	3,900	3%	5,567	3%	9,467	3%
85+	2,797	2%	5,942	4%	8,739	3%
	154,247	100%	166,048	100%	320,295	100%

Source; Office for National Statistics 2014

Notes: Mid-2012 ward population estimates refer to the 2012 electoral ward boundaries. Estimates for mid-2012 are based on aggregations of whole mid-2012 Output Area (OA) estimates. OA boundaries are not an exact fit (non-coterminous) for ward boundaries and therefore are allocated using a best-fit approach

- The total population in Wirral is expected to be approaching 321,837 in 2016 and is projected to increase to 328,823 by 2028 (table 3). This will be a 2.66% increase in 14 years.
- The older population (aged 65 years and above) are expected to increase substantially. By 2028 this population will total 83,226, compared to 68,232 in 2016 or a 22% increase.
- The population over 75 is projected to increase at the fastest rate from 31,664 in 2016 to 43,677 in 2028, which equates and increase of over 38%.
- The biggest decrease is in the 40-64 year age group, from 88,375 in 2016 to 80,011 in 2028 or 9% lower.

Table 3: Wirral resident population projections by age group (Persons) Interim 2016 to 2028

Age band	2016	2020	2024	2028	% Change (2016 - 2028)
0 - 14	56502	58099	58291	57500	**+2%**
15 - 44	108731	106775	107775	108088	**-1%**
45 - 64	88375	87183	83759	80011	**-9%**
65 - 74	36568	37753	37234	39549	**+8%**
75+	31664	34621	39927	43677	**+38%**
Total	**321837**	**324431**	**326981**	**328823**	**+2%**

Source: Office for National Statistics, 2014
Notes 2012-based Subnational Population Projections. Clinical Commissioning Groups in England, mid-2012 to mid-2037 - Population figures are derived from single year of age for persons, males and females for local authorities, created as part of the process in producing the subnational population projections. Data are unrounded for use in models and creating user defined age groups. Users should note the metadata provided with these data.

The prevalence of many eye diseases increases with increasing age. Although still lower than the average for England, Wirral will have an increasing 65+ and 85+ population in the coming years.

This in turn suggests more people could be more likely to be demanding eye health care and support services in the future. The following content looks at the how these population changes might impact on the most common eye conditions.

Epidemiology, major eye conditions and future growth
With the expected increase in the prevalence of sight loss after the age of 65 years it could mean that the incidence of age-related macular degeneration, cataract and glaucoma will also increase in proportion to the population increases indicated in tables 2 and 3 above.

Further to this, the actual proportions of these increases in the 65+ age group can be approximated if we apply the NHS Health and Social Care Information Centre (2011) statistics ratios that suggest that in England on average 75% of people registered as blind or partially sighted are over the age of 65. In Wirral this is 79%. It represents the vast majority of those with sight loss. The 18-64 age group by contrast comprise 10% of this total. The 'current' total cases figures are taken from the National Eye Health Epidemiological Model (NEHEM). www.eyehealthmodel.org.uk

The National Eye Health Epidemiological Model (NEHEM) has been used to estimate Wirral's prevalence of glaucoma, cataract and macular degeneration. The estimates predicted by the model are based on the 2001 census data so the population data on which it is based are slightly out of date but it is the most robust method available given that available research literature on the prevalence of eye disease in the UK population is sparse.

The three conditions below do not include glaucoma 'suspects', those with AMD drusen or low vision patients. Similarly, diabetic retinopathy is increasing because of its link to increased incidence of diabetes in the population

The figures are based on estimates from the POPPI and PANSI population growth estimates and the NHS figures on registered blind and partially sighted people. RNIB suggests that these official figures could underestimate the real numbers of people with sight loss by up to two thirds. Similarly, the NEHEM figures are estimates drawn from a number of sources including census data.

Age-related macular degeneration (AMD) - projected cases
This is most common form of sight loss in the UK. Table 4 shows a 1% increase in cases by 2020 and that the vast majority of these cases occur in the 65+ age group.

Table 4: Wirral population, Age-related macular degeneration (AMD) - Numbers and percentage change – projected cases to 2020.

AMD	Current	2014	2016	2018	2020
Total cases	2927 (100%)	2927 (0%)	2956 (+1%)	2956 (+1%)	2956 (+1%)
Age 18-64	292 (10%)	289 (-1%)	286 (-2%)	283 (-3%)	280 (-4%)
Age 65 +	2309 (79%)	2401 (+4%)	2470 (+7%)	2540 (+10%)	2609 (+13%)

Source: National Eye Health Epidemiological Model, 2013; RNIB, 2014
Notes: Figures are calculated using data from the NEHEM and the RNIB sight loss data tool. The projected figures are calculated using population projections from POPPI and PANSI estimates for respective age bands

AMD can be broken down into two categories: Wet AMD and Dry AMD, with currently Wet AMD accounting for 68% of the total cases as opposed to 32% for Dry.

Factors that affect AMD*:*
Ageing
- The prevalence of AMD increases with age (NICE 2008).

Smoking and other lifestyle factors

- 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).

Cataract projected cases - projected cases

Again the pattern of high incidence in older groups is consistent with the figures illustrated in table 5 (low case numbers) and table 6 (high case numbers) for cataract projected cases.

Table 5: Wirral population, Cataract – Estimate Numbers and percentage change – projected cases to 2020. (Using NEHEM low figure)*

Cataract (low)**	Current	2014	2016	2018	2020
Total cases	3116 (100%)	3116 (0%)	3147 (+1%)	3147 (+1%)	3147 (+1%)
Age 18-64	312 (10%)	308 (-1%)	306 (-2%)	303 (-3%)	300 (-4%)
Age 65 +	2462 (79%)	2561 (+4%)	2634 (+7%)	2708 (+10%)	2782 (+13%)

Source: National Eye Health Epidemiological Model, 2013; RNIB, 2014

Notes: Notes: Figures are calculated using data from the NEHEM and the RNIB sight loss data tool. The projected figures are calculated using population projections from POPPI and PANSI estimates for respective age bands

**The NEHEM model estimates the prevalence of *surgica*l cataracts, i.e. cataracts which were affecting the patient's vision sufficiently to consider surgery. This model provides two estimates, a high and low, based on two population prevalence studies (McCarty et al, 1999 and Frost et al, 2001), shown below. The wide gap between high and low estimates may reflect the subjective nature of perceived cataract impairment and the differences in ways of diagnosing cataract.

Table 6: Wirral population, Cataract – Estimate Numbers and percentage change – projected cases to 2020. (Using NEHEM high figure)*

Cataract (high)	Current	2014	2016	2018	2020
Total cases	11078 (100%)	11078 (0%)	11189 (+1%)	11189 (+1%)	11189 (+1%)
Age 18-64	1108 (10%)	1097 (-1%)	1086 (-2%)	1075 (-3%)	1063 (-4%)
Age 65 +	8752 (79%)	9102 (+4%)	9364 (+7%)	9627 (+10%)	9889 (+13%)

Source: **National Eye Health Epidemiological Model, 2013; RNIB, 2014**

Notes: Notes: Figures are calculated using data from the NEHEM and the RNIB sight loss data tool. The projected figures are calculated using population projections from POPPI and PANSI estimates for respective age bands

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Factors affecting the development of cataract:

Ageing

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

Smoking and lifestyle factors

- Smoking has been implicated in increased prevalence of nuclear and posterior subcapsular cataracts (Kelly et al 2005) as has increased UVB 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.

Medical

- Development of cataract has been linked to steroid use (Klein *et al* 2002).

Glaucoma projected cases - projected cases

Table 7 below shows numbers and percentage change over time. Again the numbers show consistent increases with the age related significance but a reduction in cases for 18 – 64 years group.

Table 7: Wirral population, Glaucoma - Numbers and percentage change – projected cases to 2020.

Glaucoma	Current	2014	2016	2018	2020
Total cases	3048 (100%)	3048 (0%)	3078 (+1%)	3078 (+1%)	3078 (+1%)
Age 18-64	305 (10%)	302 (-1%)	299(-2%)	296 (-3%)	293(-4%)
Age 65 +	2408 (79%)	2504 (+4%)	2576 (+7%)	2649 (+10%)	2721 (+13%)

Source: **National Eye Health Epidemiological Model, 2013; RNIB, 2014**

Notes: Notes: Figures are calculated using data from the NEHEM and the RNIB sight loss data tool. The projected figures are calculated using population projections from POPPI and PANSI estimates for respective age bands

Factors affecting development of glaucoma:

Ageing

- The prevalence of Chronic Open Angle Glaucoma is related to increasing age (Rudnicka et al 2006).

Ethnicity

- Chronic Open Angle Glaucoma 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.

Family history

- There is an increased risk of developing Chronic Open Angle Glaucoma if there is a close relative who has the condition (Leske et al 2008).

Social and lifestyle factors

- 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).

Sight loss is age related and given that the increased population forecasts then it is likely this will present a challenge to health and social care planners in the future.

Eye Tests

The most widely available tool for case detection in the general population is the sight test as this includes both refraction, with prescription of spectacles where required, and an assessment of eye health with onward referral in cases of possible eye disease.

Wirral has a similar level of NHS sight testing as other areas in the North West totalling 83,230 in 2012/13. However, this still only covers approximately one quarter of the total local population.

Figures on sight tests from the NHS Information Centre, in table 8, suggest that only 1 in 4 children and young people have had their eyes tested. The figures for older adults were slightly higher with 2 in 5, or almost 42%, over 60s have had their eyes tested but this still means that approaching 60% of this high risk group may have undetected ocular conditions.

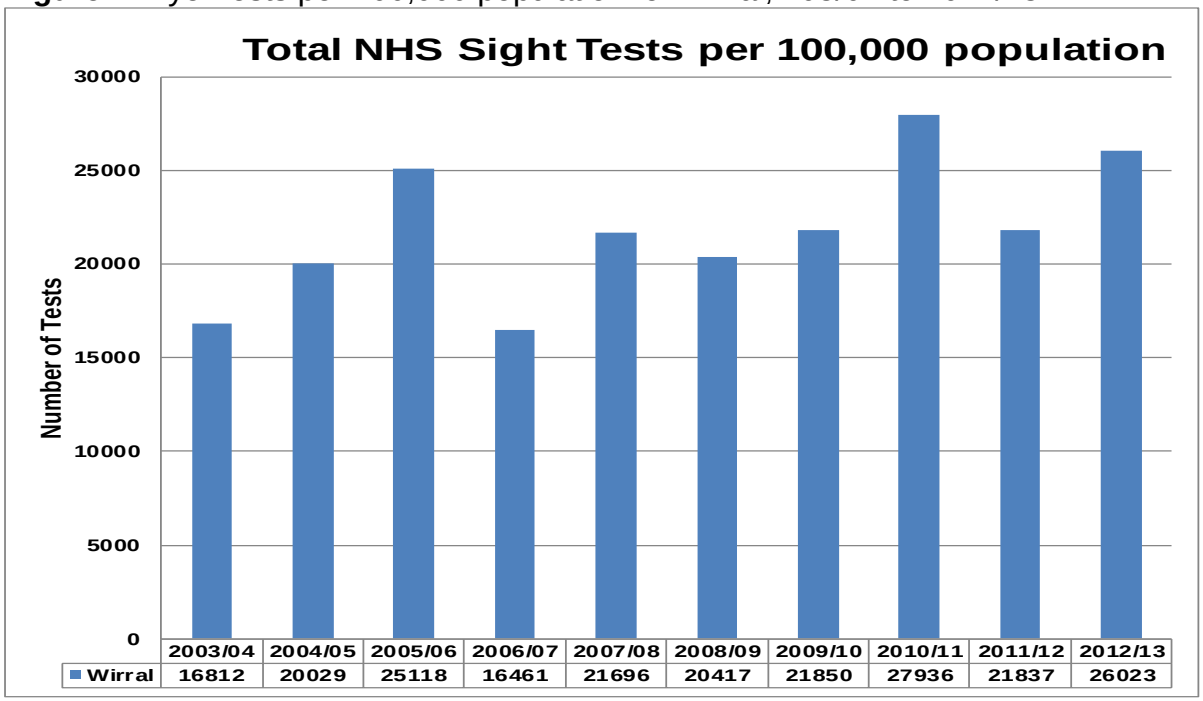
Table 8: Estimated numbers of 0-15s, Students and 60+ to have had a NHS Eye Test compared to overall population numbers, Wirral, 2012/13

	NHS Eye Tests in 2012-13	Population Figures*	Percentage of population who have had an NHS Eye Test
0-15 & Students and 16 to 18 year olds	19400	71545	27.1%
60+ years	36589	87540	41.8%

Source: NHS Information Centre (2014) and Instant Atlas Wirral (2014)
Notes: * Population figures are cumulative single year age

In figure 2 we see the number of NHS eye tests undertaken, per 100,000 Wirral population between 2003/04 and 2012/13.

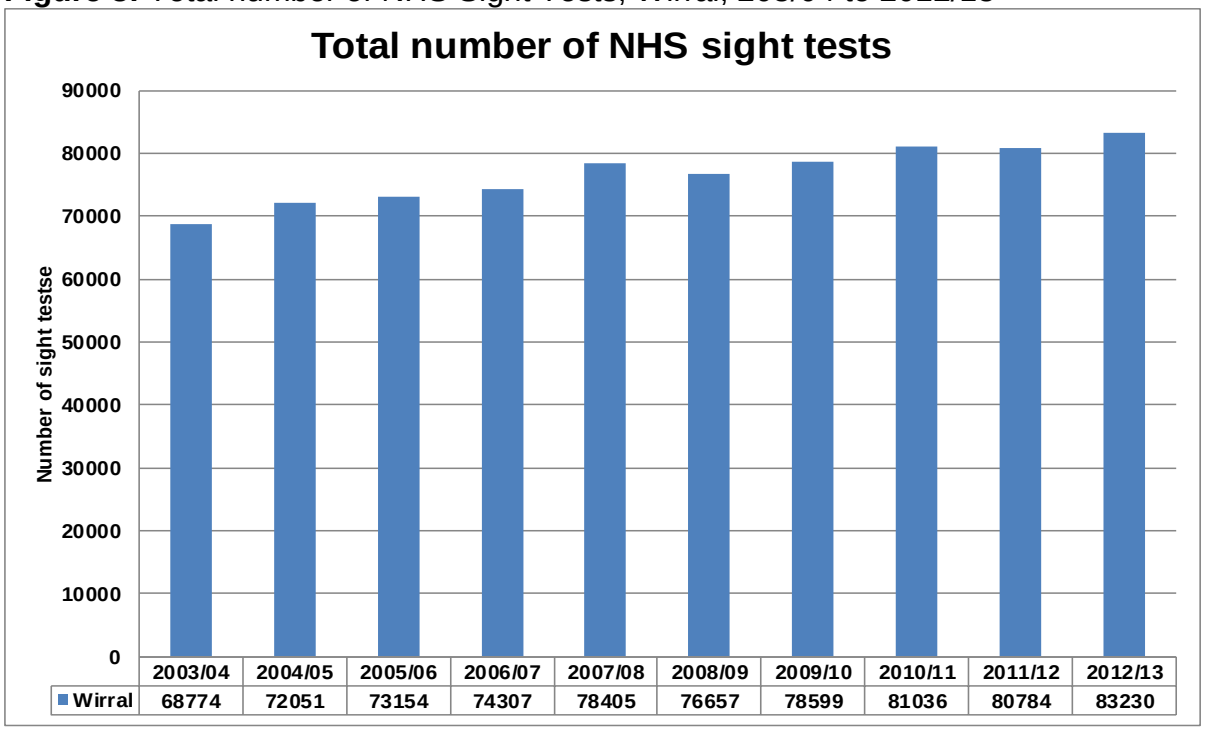
Figure 2: Eye Tests per 100,000 population for Wirral, 203/04 to 2012/13



Source: NHS Information Centre (2014) and Instant Atlas Wirral (2014)
Notes: * Population figures are cumulative single year age

The total number of NHS sight tests has risen year on year since 2003/04 to its current peak at 83,230 in 2012/13 as described in figure 3 below.

Figure 3: Total number of NHS Sight Tests, Wirral, 203/04 to 2012/13



Source: NHS Information Centre (2014) and Instant Atlas Wirral (2014)
Notes: * Population figures are cumulative single year age
Data for 2003/04 to 2006/07 has total numbers but not broken down to constituent parts

Targets

Certificate of Visual Impairment (CVI) registration and the Public Health Outcomes Framework

The data obtained for CVI registration feeds into the Public Health Outcomes Framework, this includes indicators on the certification rates of three major causes of sight loss: glaucoma, age related macular degeneration (AMD) and diabetic retinopathy; conditions that are potentially avoidable. The data is at England and upper tier local authority level.

Public Health Outcomes Framework

The Public Health Outcomes Framework indicator for eye health and sight loss, introduced January 2012, means local health commissioners have to address sight loss.

The eye health indicator tracks the rates of sight loss arising from the three major causes of sight loss including glaucoma, age related macular degeneration (AMD) and diabetic retinopathy from 1st April 2013.

The Government review the rate of preventable sight loss by measuring the numbers of all people who are certified sight impaired (partially sighted) or severely sight impaired (blind) and the numbers of these who have lost their sight from one of the three major causes of preventable sight loss: glaucoma, wet age-related macular degeneration and diabetic retinopathy.

The framework is focused on the two high-level outcomes across the public health system and beyond – firstly increased healthy life expectancy and reduced differences in life expectancy and healthy life expectancy between communities. These indicators are grouped into four domains (1) improving the wider determinants of health (2) health improvement (3) health protection and (4) healthcare public health and preventing premature mortality. Sight loss indicators are part of the fourth domain as noted below as 4.12.

4.12 *Proportion of Certificate of Visual Impairment (CVI) registrations that are due to age related* (view here)

- Preventable sight loss – Age Related Macular Degeneration (AMD) 4.12i
- Preventable sight loss – Glaucoma 4.12ii
- Preventable sight loss – Diabetic Eye Disease 4.12 iii
- Preventable sight loss – Sight Loss Certifications 4.12iv

Tackling these three conditions is the primary public health challenge in eye care. They are the biggest causes of certifiable blindness in England but with the right care, at the right time, in the right place, people can be treated effectively and in many cases their sight saved.

Further guidance and briefing on the Public Health indicator can be found here on the UK Vision Strategy website. http://www.vision2020uk.org.uk/ukvisionstrategy

UK Vision Strategy – see National and Local strategies and plans below

Performance

Performance reporting on the Public Health Outcomes Framework (PHOF) is the responsibility of the Public Health Performance Team for Wirral Council. The most recent local PHOF performance details reports can be accessed here.

A number of figures outlining the performance results for Wirral compared to Cheshire, and Merseyside Local Authorities and England can be viewed here

Further comparative information considering PHOF eye health indicators across North West local authorities and England can be viewed here.

Table 9 offers a performance comparison for 2011/12 for the Merseyside areas

Table 9: Public Health Outcomes Framework: Comparison of sight loss indicators, Merseyside 2011 - 2012

Indicator (2011/12)	England	Halton	Knowsley	Liverpool	Sefton	St. Helens	Wirral
Age related Macular Degeneration (AMD) 4.12i***	110.5	107.3	108.3	123.3	120.3	120.0	179.1
Glaucoma 4.12ii**	12.8	14.4	9.5	10.1	11.1	31.3	26.6
Diabetic eye disease.12iii*	3.8	-	6.4	5.4	3.3	6.6	3.3
Sight loss certifications 4.12iv****	44.5	44.5	50.7	45.5	54.8	66.1	75.0

Source: Public Health Outcomes Framework – latest updates as at August 2013 http://www.phoutcomes.info/
Notes:
* Crude rate of sight loss due to diabetic eye disease aged 12+, rate per 100,000 population
** Crude rate of sight loss due to glaucoma in those aged 40+ per 100,000 population
*** Crude rate of sight loss due to AMD in those aged 65+ per 100,000 population
**** Crude rate of sight loss certifications per 100,000 population

For all conditions, except Diabetic Eye Disease, noted in table 9 above, Wirral has higher numbers than England and as 62% for AMD, 108% for glaucoma and 69% for sight loss registrations. Comparison to other Merseyside authority areas and their highest results suggests Wirral for AMD is 45% higher than Liverpool, for glaucoma is only better than St. Helens though is 11% worse than St. Helens for sight loss certifications.

Table 10: Comparison of rates for known eye disease, Wirral, North West & England, 2011/12

Indicator (2011/12)	Wirral (2011/12)	North West (2011/12)	England (2011/12)
Rate of Age related Macular Degeneration CVIs per 100,000 people over 65 years	179.1	101.4	110.5
Rate of Glaucoma CVIs per 100,000 people over 40 years	26.6	12.3	12.8
Rate of Diabetic eye disease CVIs per 100,000 people over 12 years	3.3	4.1	3.9
Overall rate of CVI per 100,000 people (all ages)	75.0	41.6	44.5

Source: RNIB (2014) http://www.rnib.org.uk/knowledge-and-research-hub-key-information-and-statistics/sight-loss-data-tool
Notes: * A Certification of Vision Impairment (CVI) formally certifies a person as either sight impaired (partially sighted) or severely sight impaired (blind). Each CVI form is completed by a consultant ophthalmologist in an eye clinic, with a copy sent to the local social services department and providing a formal route to social care services.

As table 10 highlights, Wirral has a worse performance when compared to North West with the exception of diabetic eye disease where it is lower in Wirral.

What is this telling us?

Overview

Eye health is an important issue for Wirral residents. Poor eye care can lead to poor vision or blindness. A range of contributory factors can make worse the potential to suffer from a range of eye conditions and many of these conditions can be avoided through better care and early detection.

The future demographic for an older population has potential to provide even greater eye care issues for residents as many conditions are associated with greater age.

Wirral is taking steps to minimise impacts and maximise benefits as can be seen in the following sections though continued efforts need to be maintained and the opportunity to increase health promotion messages across disciplines, areas of expertise and organisations should be considered in order to provide residents with the knowledge to take care of their vision, now and in the future.

Local views

Ophthalmology Stakeholder Event – Analysis and future strategy - 25th February 2014

The Wirral Eyecare event was held 25th February 2014 with the aim of setting the vision for the future of Ophthalmology services in Wirral. The event was well attended with representation from patients, consultants, specialist nurses, Optometrists, GPs and managers. There was representation from Wirral University Teaching Hospital, Peninsula Health and Wirral Vision. The session commenced with presentations detailing progress to date and existing services and followed with breakout sessions. The breakout sessions focused on:

- Electronic Referrals
- Primary Care Management
- Other ideas/issues for development

Key Findings

The key findings from the group work are summarised into the following broad themes:

- Referral Processes – a) Electronic referrals and b) Referral management options
- Education
- Communication

Referral Processes

a) Electronic Referrals

- Universal support for an electronic referral process for referrals into secondary care and community providers – consideration needed as to approach: secure email account, choose & book, WROCs, Medisoft , Docman
- Need to move away from paper referrals that can get lost
- Potential pilot for routine, non-urgent referrals
- Incorporate two way electronic system to allow feedback to referrer/Optometrist
- Use electronic form to guide referrals to most appropriate provider

b) Referral Management

- Estimated 50% referrals that do not need to be seen in hospital
- Potential to move secondary care activity into community – exception of surgery
- Ability for all referrals received to be triaged by nurse/consultant to advise if need to be seen in secondary care or if management advice could be provided or another service identified that is more clinically appropriate for the patient
- Safe transfer of OCT images to consultants for opinion would be valuable

Education

- Education needed for GPs to advise when to refer to secondary care and emphasise what is available in the community
- Up skilling of GPs in ophthalmology needed – could be achieved through email advice service/ patients triaged back to practice with management advice
- Patient education – self management and community services available within Optometry practices free at the point of access

Communication

- Patients aren't aware that optometrists can help with eye health, only sight tests
- Practices forget about schemes in community optometrists/ophthalmology services and still refer to secondary care
- Regular practice communication needed
- Highlight risk factors for eye health - joined up approach with public health
- Publicise support services available for patients e.g. patients with AMD
- Awareness across all providers of the schemes running e.g. hospital staff not currently aware of all community schemes and the practices offering advanced assessments – flashes and floaters

The event report and action plan can be accessed here

UK Vision Strategy - *Seeing it My Way*

The UK Vision Strategy launched *Seeing it My Way* (2012) which identified key outcomes that people with sight loss identified as being important to them. These expressed outcomes can in turn support future service provision and commissioning. The document can be found here.

National and local strategies

UK Vision Strategy

The new UK Vision strategy was launched in June 2013, and revised the key elements to set out a framework for change and the development of excellent services to build a society in which avoidable sight loss is eliminated and full inclusion becomes accepted practice. The refreshed document is a five year plan and can be found here.

There are three key elements to the UK Vision Strategy:

(i) Everyone in the UK looks after their eyes

- To raise awareness and understanding of eye health,
- Encourage every individual to develop personal responsibility for their eye health and sight

- Raise awareness of eye health and the impact of sight loss among health and social care practitioners

(ii) 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
- Improve co-ordination, integration, reach and effectiveness of eye health and eye care services
- Ensure that, when permanent sight loss occurs, emotional support, habilitation and/or rehabilitation be provided in a timely fashion, enabling people to retain or regain their independence.

(iii) A society in which people with sight loss can fully participate
- Improve attitudes, awareness and actions within education, employment and other services
- Ensure that children and young people with sight impairment can take their place in society
- Achieve improved compliance with equality legislation.

UK Vision Strategy website has a range of information and content

NICE guidelines (CG85)
Diagnosis and management of chronic open angle glaucoma (COAG) and ocular hypertension (OHT)

The advice in the NICE guideline covers the diagnosis, treatment and care of:
- Adults (18 years and over) with a diagnosis of the condition known as 'chronic open angle glaucoma'
- Adults with a diagnosis of ocular hypertension (raised eye pressure)
- Adults who are at a high risk of developing glaucoma.

NICE guidelines for Macular Degeneration (in progress)

Current activity and services

Local service provision

GPs are often the initial point of contact of patients who are concerned about the health of their eyes. This is especially true for minor ailments such as conjunctivitis, blepharitis and meibomian cysts (styes) which account for around 70% of eye complaints dealt with by GPs (McDonnell 1988*).* It has been estimated that 1.5% of GP consultations relate to eye problems (Sheldrick *et al* 1993). GPs may refer a patient to an optometrist, a GP specialist or onward to ophthalmology.

There is a wide range of services for people with sight loss in Wirral, from the identification of sight loss, to supporting people to manage and deal with their sight loss and regain their independence. The services are provided by health services, local

authority and third sector organisations to provide an effective pathway for people with sight loss.

The current services provide eye care as well support to people with sight loss, and although some of the services provided are not directly linked to preventing loss of sight, they are all involved in the preventative agenda and encourage people to be aware of the importance of eye care, and regular eye checks.

Please see the Supplementary Eye Health Service document here for further details

Eyecare Pathways
The Wirral CCG - Guidance for Ophthalmology Referrals – provides GPs and others the referral pathway for the range of eyecare needs, from routine, to urgent and emergency and across four providers: Wirral University Teaching Hospital Eye Department, Peninsula Community Ophthalmology Service, Wirral Vision Community Ophthalmology Service (Wirral Community Trust) and Wirral Community Optometrists (Wirral Community Trust). The specific conditions, protocol and process can be viewed here

Key inequalities

Sight Loss and Learning Disabilities
Seeability identify that one in three people with learning disabilities have sight loss, and a lack of access to regular eye care puts people with learning disabilities at risk of unnecessary sight loss. Someone who is losing sight yet unable to communicate what is happening can become confused or angry, causing behavioural problems or losing their sight may cause loss of confidence and lead to them becoming lonely or isolated.

Sight Loss and Falls
Falls represent the most common and serious type of accident in older people and 1 in 3 people over the age of 65 have a major fall at least once a year. Age UK identify that poor vision was a factor in at 270,000 falls in the 2 years of 2009 and 2010.

Mental health impacts of sight loss (Early Reach)
Evidence shows that the emotional and psychological impact of sight loss is profound and that depression amongst people with sight loss is significantly higher than the population in general. RNIB report highlights McManus and Lord (2012) research suggesting that one third of people with sight loss were having increasing feelings of unhappiness or depression. Older people living with sight loss are three times more likely to experience depression than normal people with good vision (Sight Loss UK 2012, RNIB). For patients newly diagnosed with sight loss, practical and emotional support is needed to maximise the chances of patients adjusting to their sight loss with minimal trauma.

The King's Fund research in 2010 *How to deliver high-quality, patient-centred, cost-effective care* suggests that the provision of practical and emotional support to people with health problems has multiple benefits - it increases people's capacity to self-manage their condition, improves health outcomes, helps people live independently and reduces the burden on the health service by avoiding unnecessary hospital admissions.

The UK Vision Strategy stresses that “too many people who have lost some or all of their sight do not receive the support they need to deal with the emotional trauma of sight loss or manage basic everyday tasks.” More than 80 per cent of eye care professionals agreed that emotional and family support is essential as services for visually impaired people.

Smokers
Smoking doubles the risk of sight loss due to Age-related Macular Degeneration, the most common form of sight loss, yet this link has limited public awareness.
The possible inclusion of eye health messages in smoking cessation programmes and other public health initiatives that promote the need for regular eye tests amongst the general population, could provide improved outcomes for this groups of residents

Deprivation
Early reach and detection of eye care issues is critical. Evidence shows that there is a link between people on low incomes and living in deprivation has lower access to services. Three out of four blind or partially sighted people are living in poverty or on its margins. Services need to be offered at the earliest possible moment in the sight loss journey. This includes at opticians, GPs and at the point of diagnosis in the eye clinic. This can be advice and information to enable people to make choices and decision that can prevent further sight loss.

Ethnicity
Ethnicity is a factor in some forms of visual impairment for a range of black and minority ethnic groups

Preventing sight loss for at risk groups
It is estimated that 50% of sight loss is avoidable if detected and treated early enough. Spending on prevention initiatives can provide a long-term cost saving in health and social care costs as well as other downstream costs e.g. loss of employment due to deteriorating vision. Prevention initiatives could include:

- Access to eye health screening programmes, particularly for those from hard-to-reach groups such as BME communities, also people who are obese and smokers.
- Timely access to treatment, for example, cataract surgery
- Support with treatment compliance regimes, as RNIB suggest that non-compliance with glaucoma treatment for example could be as high as 40 - 50% which in turn could lead to further deterioration in vision.

Key gaps in knowledge and services

Understanding the numbers of residents with sight loss
The figures quoted throughout the section are estimates and are combined with data collated by organisations on residents known to have a level of sight loss. So there is potential for disparity between the numbers of persons certified as visually impaired or severely visually impaired and the numbers reported registered by the Social Services Visual Impairment Team. Work to produce a more accurate presentation of actual numbers could be considered.

Welfare Reform – consider if ongoing welfare reform has had any impact for residents with eye care issues.

Potential increasing demand for local services – consider any data on the numbers of people who use the services in Wirral and the consequences of an ageing population need to be established.

Links

RNIB
Action for Blind People
UK Vision Strategy
Wirral Society of the Blind and Partially Sighted
Henshaws society for blind people

References

The references can be accessed here

Contact

For further details please contact
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To access a range of Wirral JSNA easy read documents
Please use this link to access easy read content or go to
http://info.wirral.nhs.uk/easyread.html

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