Eye health needs assessment to inform the work of the Ophthalmology Clinical Programme Group (Gloucestershire Clinical Commissioning Group).

Autumn 2014

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Executive summary

Context

- This document presents the findings of a high level review of the data on population need with respect to eye health and vision in Gloucestershire. It has been prepared to inform the work of the Ophthalmology Clinical Programme Group (CPG).
- The review is phase one of a full needs assessment which will also incorporate a service mapping; and qualitative information on the views of stakeholders and service users.

Overall prevalence of partial sight and blindness (PSB)

- The overall prevalence of partial sight and blindness (PSB) in Gloucestershire is estimated at 3.4% slightly above the national average of 3%.
- The four leading causes of PSB are age-related macular degeneration (AMD), cataracts, glaucoma, and diabetic retinopathy. Nationally, it is estimated that these conditions are responsible for: 16.7%, 13.5%, 5.3%, and 3.5% respectively of partial sight and blindness.
- The prevalence of PSB in Gloucestershire is projected to increase to 4.9% by 2030 (from 3.4% in 2011); and will increase at a faster rate than the country as a whole. This is likely to be explained by the county's ageing population.

Costs of sight loss

- NHS expenditure on problems of vision has increased over the last decade from £1.21 billion in 2003/04 to £2.3 billion in 2012/13.
- Gloucestershire CCG's total expenditure on 'problems of vision' in 2012/13 was £26.2 million. Outpatient costs accounted for over a third (35%) of total expenditure.

Risk factors and inequalities

- Age is the primary risk factor for visual impairment and sight loss.
- Age is also associated with increased risk of developing a range of long term conditions; and when designing care packages it will be important to consider the impact of co-morbidities alongside PSB.
- Women are more likely to be affected by PSB than men. Other risk factors for PSB: include low income households, ethnicity and lifestyle behaviours, such as smoking (a risk factor in AMD) and obesity (a risk factor for diabetes). People with a learning disability are also more likely to experience sight loss. Understanding which groups

are likely to be more vulnerable to sight loss can provide an indication of the drivers of future need and inform early intervention strategies.

- National evidence suggests that some population groups may experience barriers to accessing services, notably those from lower incomes and some BME groups; which may lead to late diagnosis and delayed treatment. This should be explored through the service mapping and qualitative insight research.

Certification and registration as an indication of need

- Certifications for Visual Impairment (CVIs) are used in the Public Health Outcomes Framework as a measure of avoidable sight loss. The rate of CVIs issued in Gloucestershire in 2012/13 was in line with the national average and has been fairly consistent since 2010/11; averaging at 252 CVI issued per annum.
- Based on CVIs issued, the incidence rates in Gloucestershire of diabetic eye disease, glaucoma and AMD in 2012/13 were in line with the national average.
- A CVI allows a person to voluntarily register as sight impaired with their local authority. As of June 2014, there were 3197 individuals registered with Gloucestershire County Council as having a visual impairment; a significant number of whom were also registered as having additional disabilities, including dementia, hearing impairment and COPD. Only 17% were in receipt of adult social care.
- Certifications and registrations (C&R) are not necessarily a true reflection of need. Rates of C&R have been declining nationally, and there is some national evidence to suggest that both clinicians and service users may not be fully aware of the benefits contributing to lower uptake rates. Again national research indicates that some population groups, notably ethnic minorities, are likely to be under-represented in registration data.

Eye-health in Gloucestershire- sight threatening conditions

- The number of people with early stage AMD in Gloucestershire is projected to increase by 21.3% between 2011 and 2020; from 26,128 people to 31,705. The number with late stage AMD (both types) is projected to increase by 24.6% from 5,880 to 7,327.
- Between 2011 and 2020 the county is projected to see a 27.9% increase in the number of people with cataracts; from 6,369 to 8,148.
- The number of people with glaucoma is projected to increase by 6.4% between 2011 and 2020; from 5,754 individuals to 6,124.
- Between 2011 and 2020, the number with background diabetic retinopathy is projected to increase by 9.4% from 10,920 to 11,944.

Early identification

- Early identification of eye problems can make a significant difference to patient outcomes.
- Regular sight tests can pick up a number of eye conditions before symptoms may become apparent. Data is only available on sights tests provided free by the NHS to eligible individuals. The overall rate of NHS sight tests in Gloucestershire is in line with the national average; but there is scope to increase uptake in those aged 60 plus; particularly given the increased risk of eye problems in this age group. Nationally it is estimated that around half of over 60s do not have an annual sight test.
- Uptake of diabetic eye screening in Gloucestershire in 2012/13 amongst those invited to attend was 71.9%. While this meets the required minimum standard of uptake (70% or above), it is significantly below the average national uptake of 79.1%.[1] This suggests room for improvement.
- QOF data (2012/13) indicates that on average 90.5% of people on the diabetic register in Gloucestershire had a record of retinal screening in the last 15 months. However a number of practices fall below the CCG average.

Recommendations

While this is only phase one of the full needs assessment, some initial priorities for further review have been identified.

1. Explore options for improving the collection and availability of local data on the incidence and prevalence of partial sights and blindness; and sight threatening eye conditions to provide a more accurate picture of need and unmet need.
2. Ensure the prevention of sight loss is included as a key message in health promotion programmes. Work with providers of smoking cessation and weight management programmes to raise awareness of the links between lifestyle and eye health.
3. Consider targeted work with the Asian and African Caribbean population to raise awareness of eye health; promote attendance for sight tests and (if applicable) DR screening, and understand any barriers to accessing services.
4. Investigate whether further support is needed to enable people with learning disabilities with a visual impairment to access relevant eye health services and support.
5. Use the service mapping and qualitative work with stakeholders and service users to: (a) explore any inequalities in the uptake of relevant eye health services between areas and population groups; (b) explore barriers to accessing services and understand possible reasons for late presentation.

6. Promote uptake of NHS sight tests among the over 60s, with an opportunity to link reminders to the annual flu jab or NHS Health Check.
7. Explore the Certification process with clinicians to understand how the system is being used; and whether it is being consistently offered to eligible patients. This will help ensure that the CVI data feeding into the Avoidable Sight Loss indicator in the Public Health Outcomes Framework is as accurate as possible.
8. Work with primary care to ensure all general practices have a complete record of whether diabetic patients have attended for retinal screening. Encourage primary care practitioners to promote the benefits of retinal screening to their diabetic patients.
9. Consider the potential impact of visual impairment alongside other co-morbidities when designing care packages for older people.

Section1: Introduction

Purpose

1.1 This document presents the findings of a high level review of the data on population need with respect to eye health and vision in Gloucestershire. It has been prepared to inform the work of the Ophthalmology Clinical Programme Group (CPG); the aim of which is to 'minimise avoidable sight loss' in the local population.

1.2 This review is phase one of a full needs assessment which will also incorporate a service mapping (considering service provision, access and usage); and qualitative information on the views of stakeholders and service users.

Note on availability of data sources

1.3 There are limited published data sources available on eye health and visual impairment. Relevant conditions, notable cataracts, AMD and glaucoma, are not recorded on QOF disease registers; and data on prevalence is not captured by the NHS Information Centre. One exception is diabetic retinopathy which is monitored by a UK-wide screening programme. The Public Health Outcome Framework (PHOF) uses Certificates of Visual Impairment (CVIs) as an indicator of avoidable sight loss. While PHOF data on CVIs is included, it should be noted that not all individuals with visual impairment will be certified, and as such, CVIs may not be a true reflection of need.

1.4 This assessment has largely drawn on modelled estimates published by the National Eye Health Epidemiological Model (NEHEM) and the RNIB, both of which are based on 2011 census data. It should be noted that the 2009 Access Economics Report: 'Future Sight Loss UK' commissioned by the RNIB and cited in this report, is currently being updated with a revised version due to be published in 2015. Colleagues in the Gloucestershire Local Optical Committee are liaising with the RNIB and Access Economics regarding the definitions of sight loss used in the 2009 report.

Section 2: National context

2.1 This section presents data on the national picture with respect to eye health and visual impairment, including risk factors.

National prevalence of visual impairment and sight loss

2.2 Nationally the RNIB estimate that 1.8 million people in the UK are partially sighted or blind (PSB) (2008 data); and this figure is projected to rise to nearly 4 million by 2050 as a result of the UK's ageing population.[2] This figure includes people who are registered blind or partially sighted and those whose sight is just better than the level which qualifies for registration. The full definition used by the RNIB of the levels of visual acuity which constitute partial sight and blindness is provided in annex A.

2.3 Of the 1.8 million people with PSB, the proportion of people with blindness (*severe* sight loss) was estimated at 12.1% compared to 63.4% with mild sight loss and 24.5% with moderate sight loss.[3] Definitions of severe, moderate and mild sight loss are provided at annex A.

2.4 The prevalence of *severe* sight loss or blindness typically increases with age; and as noted the projected rise in the overall prevalence of PSB through to 2050 can be partly attributed to increased life expectancy.[4] One out of nine people over the age of 60 is living with sight loss; rising to one in three in those aged 85 and over[5]; the age group at the highest risk of eye disorders causing visual impairment[6].

2.5 The impact of the ageing population on the prevalence of PSB has clear implications for future health and social care planning. Age is also the main risk factor for the development of a number of other long-term conditions, such as dementia, cancer and COPD; and it is important to consider the impact of co-morbidities among people living with sight loss when designing care packages.

2.6 The leading causes of sight loss in the UK are age-related macular degeneration (AMD), glaucoma, diabetic retinopathy and cataracts. Table 1 provides an estimate of the overall prevalence of each condition in the UK in 2008/09 based on RNIB data.

2.7 Of the estimated 1.8 million people with PSB in 2008, the RNIB estimate that approximately:

- 63% were female and 37% male
- 16.7% had partial sight and blindness due to AMD;
- 13.7% has partial sight and blindness due to cataract;
- 5.3% had partial sight and blindness due to glaucoma;

- 3.5% had partial sight and blindness due to diabetic retinopathy; and
- 7.4% had partial sight and blindness due to other eye disease.[i]

Of the 12.1% estimated to be blind in the UK in 2008:

- 64.3% were female and 35.7% male
- 50.5% were blind due to AMD;
- 16.6% were blind due to glaucoma;
- 12.5% were blind due to cataract;
- 8.7% were blind due to diabetic retinopathy; and
- 9.7% were blind due to other eye diseases.

It is interesting to note that there is a gender imbalance in rates of partial sight and blindness, with women significantly more likely to be affected than men.

Table 1: Estimated prevalence
Source: RNIB 2009

Condition	**Estimated national prevalence[7]**
Age related mascular degeneration (AMD)	2.45% (people aged 50+)
Glaucoma	1.47% (people aged 30+)
Cataracts	Ranges from 1.88% to 6.77%[8] (people aged 40+)
Diabetic retinopathy	28% background diabetic retinopathy (amongst people diagnosed with diabetes)

2.8 It is estimated that approximately 50% of sight loss is preventable or due to a treatable cause[9]; highlighting the importance of early diagnosis and treatment.

2.9 In terms of an estimate of unmet need, research suggests that a significant proportion of the older population in the UK have undetected partial sight and blindness. One study estimated that between 20% and 50% of older people had undetected reduced vision, with the majority of this group having correctable visual problems, such as refractive error and cataracts.[10]

[i] Less common condition such as neuro-ophthalmic disorders (main disorders in children), retinitis pigmentosa and other retinal conditions account for the remaining prevalence of partial sight and blindness.

Risk factors for sight loss and visual impairment

2.9 An understanding of risk factors and vulnerable groups can help inform how local awareness initiatives and interventions are targeted; and provide an indication of which individuals or groups are likely to experience a higher level of need.

2.10 In addition to ageing, there are a number of further risk factors for PSB[11].

- There is evidence to suggest that people on low incomes are at greater risk of sight loss due to late presentation and lower uptake of screening, referral and treatment.[12]
- Smokers are at higher risk of developing age related macular degeneration (AMD) and cataracts.[13]
- Obesity is the primary risk factor for the development of type 2 diabetes, which can lead to the development of diabetic eye disease.
- People with diabetes are twice as likely to suffer from cataract and glaucoma than the general population
- Evidence suggests a genetic link to glaucoma, with the increase in risk for first degree relatives estimated to between three and nine times that of non relatives.
- People with a learning disability are ten times more likely to experience sight loss than the general population. [14]

2.11 The relative risk of developing different eye conditions also varies between ethnic groups. Research[15] suggests that:

- People from African-Caribbean descent have a greater risk of developing AMD at a younger age.
- Asians have a greater risk of developing cataracts, compared to the African Caribbean and white population.
- Prevalence of type 2 diabetes is higher among South Asians; and there is also a raised rate amongst people of African Caribbean ethnicity; increasing the risk of diabetic retinopathy.
- The relative risk of glaucoma is much higher for the African Caribbean population compared to the white population.

2.12 While certain risk factors relate to lifestyles choices, genetics or demographics; there is also evidence to suggest that some individuals or groups experience barriers to accessing health services which leads to conditions going undetected, notably those on lower incomes and people from minority ethnic groups.[16] It is recommended that uptake and accessibility of local services across population groups is explored through the service mapping and qualitative research with service users and stakeholders.

2.13 Sight loss is also associated with a number of other conditions and outcomes for the individual which might impact on care, including falls in older people (the RNIB estimate that 3.8% of all falls can be directly attributed to visual impairment[17]); lower reported wellbeing and reduced employment rates.[18] Notably, evidence suggests that people with sight loss are seven times more likely that those with no impairment to feel unhappy or depressed.[19]

Costs of sight loss

2.14 There are a number of different costs associated with sight loss. These include the costs to the NHS from the provision of eye health services and treatment for those affected by eye conditions; and indirect costs to the economy from the provision of unpaid care to those living with sight loss (often provided by family and friends), and reduced unemployment.

2.15 The total expenditure on healthcare linked to eye health in the UK is estimated at £2.64billion (based on 2011/12 data).[20] Of this, £2,225 million is spent in England. Table 2 shows how expenditure in England breaks down.

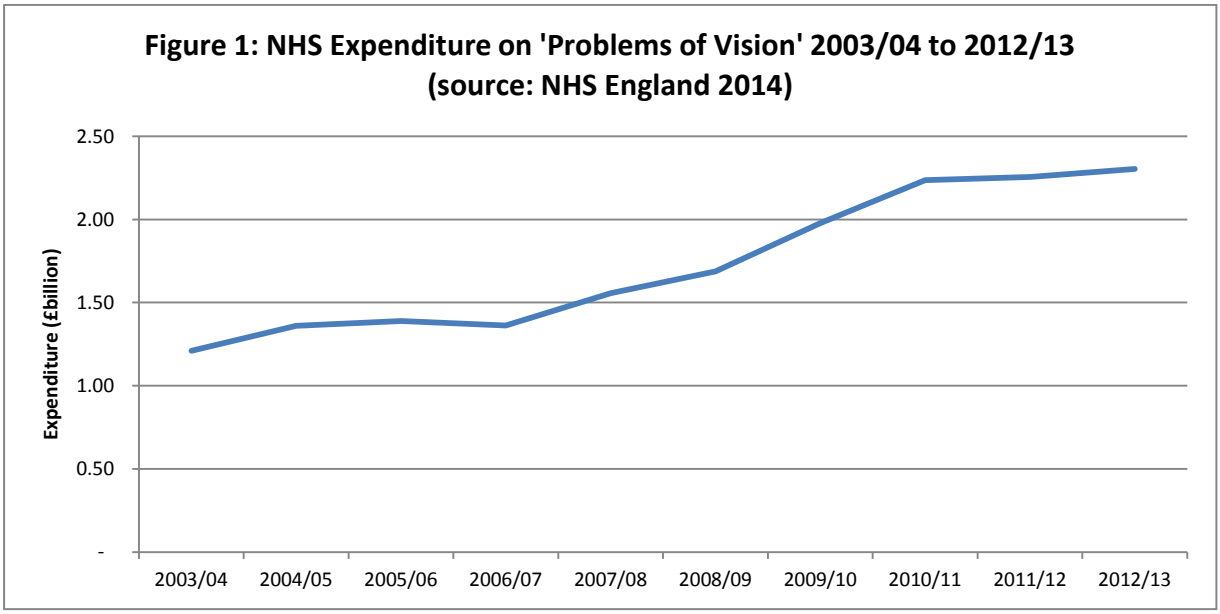
Table 2: NHS expenditure in England on 'problems of vision'
Source: RNIB 2013 (based on DH programme budgeting data 2011/12; and RNIB Access Economics 2009)

Activity	**Proportion of expenditure**	**Estimated expenditure**
Outpatient costs- expenditure on outpatient ophthalmology services.	30%	£676.5m
Inpatient costs - expenditure on inpatient ophthalmology services.	23.8%	£536.69m
Primary care costs – expenditure on providing primary eye care services, including NHS Sight tests.	22%	£496.1m
Primary care prescribing	9%	£202.95m
Other secondary care	7.5%	£169.13m
Community care, social care and care provided in other	5.3%	£119.56m

settings.		
Accident and Emergency	2.3%	£51.87m
Prevention and health promotion	0.1%	£2.26m

2.16 Nationally NHS expenditure on problems of vision has increased over the last decade from £1.21 billion in 2003/04 to £2.3 billion in 2012/13 (figure 1).[21] Spend per head follows the same trend.

Figure 1: NHS Expenditure on 'Problems of Vision' 2003/04 to 2012/13 (source: NHS England 2014)



2.17 The indirect cost of sight loss to the UK economy in 2013 is estimated to be around £5.3 billion[22]. The largest proportion of these indirect costs is linked to the provision of informal care, in most cases provided by a family member or friend. The type of unpaid care is estimated to have cost the UK economy £2.5billion in 2013. Lower employment rates and the cost of specialist equipment and modifications are also significant factors in the indirect cost of sight loss.

Section 3: Local context

3.1 This section presents available data on population need with respect to eye health and visual impairment in Gloucestershire.

Gloucestershire population profile

3.2 As noted in section 2, demographic and socio-economic factors can impact on an individual's likelihood of conditions causing sight loss. It is therefore useful to consider the profile of the Gloucestershire population, specifically with respect to age, ethnicity and deprivation.

3.3 Ageing is the main risk factor for a number of eye conditions (see 2.4). In Gloucestershire there is already a significant proportion of the population aged over 65; and this trend is projected to continue as a result of rising life expectancy. Between 2011 and 2021 the county is projected to see 27.3% growth in those aged 65 plus; and 36% growth in those aged 85 and over; the age group with the highest prevalence of severe sight loss.[23] An ageing population is likely to result in more people living with a range of long term conditions, alongside increases in those experiencing sight loss.

3.4 The age profile of the county varies by district with the more urban localities, such as Gloucester tending to have a younger demographic. In 2011, Cotswold had the highest percentage of people aged 65 plus (22.4%) followed by the Forest of Dean (20.9%) and Tewkesbury (20.3%).[24] The smallest percentage was in Gloucester (14.9%). The fastest rate of growth in over 65s through to 2021 is projected to occur in Stroud, Tewkesbury and the Forest of Dean. Both Stroud and Tewkesbury are projected to see a rate of growth in over 75s and over 85s higher than the county average. [25] It is reasonable to assume that the number of older people living with sight loss is likely to be higher in these areas.

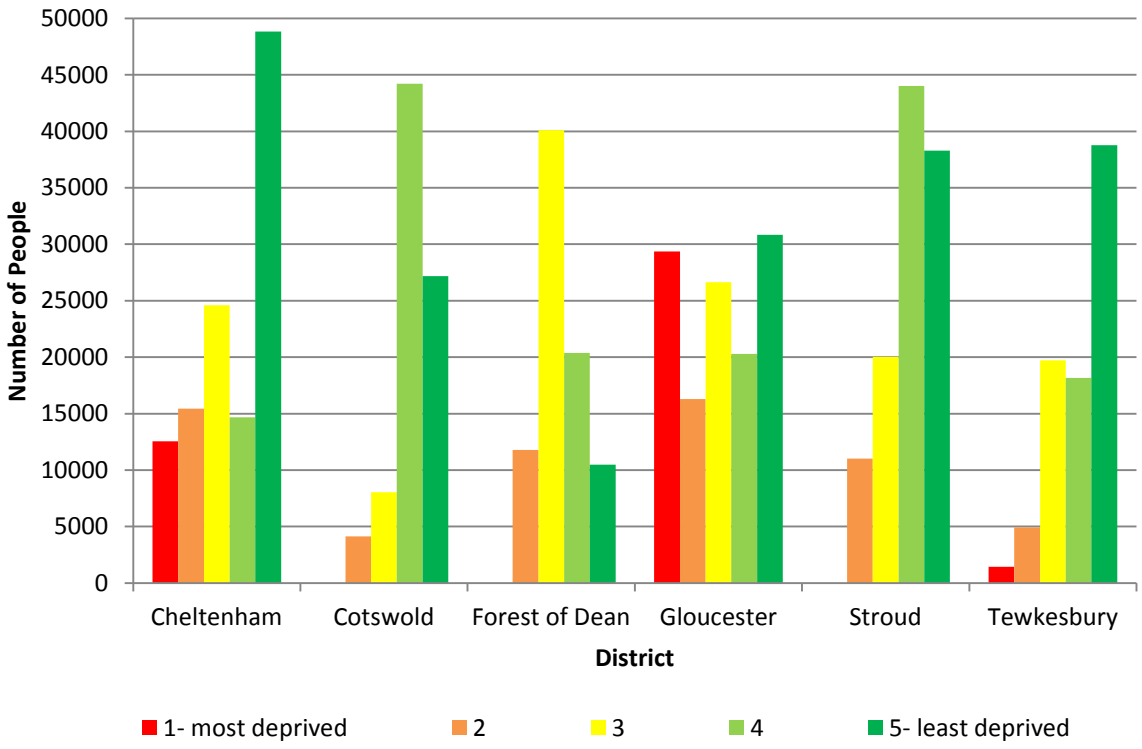
3.5 As noted at 2.10, the relative risk of developing different eye conditions also varies between ethnic groups. Gloucestershire has a small Black and Minority Ethnic (BME) population (4.6%) compared to England (14.1%); however there are variations between districts, with Gloucester having the highest BME population (10.9%). [26] Overall, 1.5% of the population is of mixed ethnicity; 2.1% Asian ethnicity and 0.9% Black/Black British.

3.6 Lower socio-economic status is also associated with a greater risk of sight loss. This has been attributed to lower uptake of services, such as screening and eye tests, and a tendency to present late meaning that treatment is delayed. Lifestyle behaviours may also be a factor. Smoking, a risk factor for AMD and cataracts, and obesity, a risk factor for diabetes, are typically more common in areas of deprivation.

3.7 Overall Gloucestershire is a relatively affluent county, however analysis of the Indices of Multiple Deprivation (IMD 2010) shows that there are pockets of deprivation. In terms of overall deprivation rankings the county has eight neighbourhoods (Lower Super Output Areas) all in Gloucester and Cheltenham, which are amongst the *most deprived 10%* of neighbourhoods in England. The eight neighbourhoods are home to 12,698 residents.

3.8 Twenty seven neighbourhoods are classified in the *most deprived 20%* of neighbourhoods in the country (quintile 1) (representing just under 45,000 Gloucestershire residents). Figure 2 shows levels of overall deprivation by district broken down into national deprivation quintiles.

Figure 2: National deprivation quintiles by district in Gloucestershire (Source: IMD 2010, ONS)



Gloucestershire lifestyle risk factors

3.9 As noted at 2.10, lifestyle behaviours can also increase an individual's risk of developing certain eye conditions. Knowing which individuals are most likely to engage in these lifestyle behaviours can assist the CCG in planning early intervention and prevention strategies.

3.10 Smoking is associated with an increased risk of AMD and cataracts. Overall the prevalence of smoking in Gloucestershire is significantly lower than the national average (16% compared to 18.4%[27]) However smoking rates vary between districts (rising to 21.2%

in Cheltenham) and by occupational group. Smoking rates among those working in routine and manual professions in the county are as high as 30%.

3.11 Data from the GP patient survey which records *self-reporting smoking* also highlights variation between practices with prevalence rising to 36.4% among patients registered at Matson lane surgery and 31.3% at Kingsholm surgery (appendix 1). Mapping smoking prevalence against individual practice IMD scores suggests some correlation with deprivation; with the highest rates tending to be among practices in the more deprived deprivation deciles.[28] This is consistent with national evidence regarding the relationship between smoking and socio-economic status; which shows that smoking rates remain highest amongst those who earn the least.

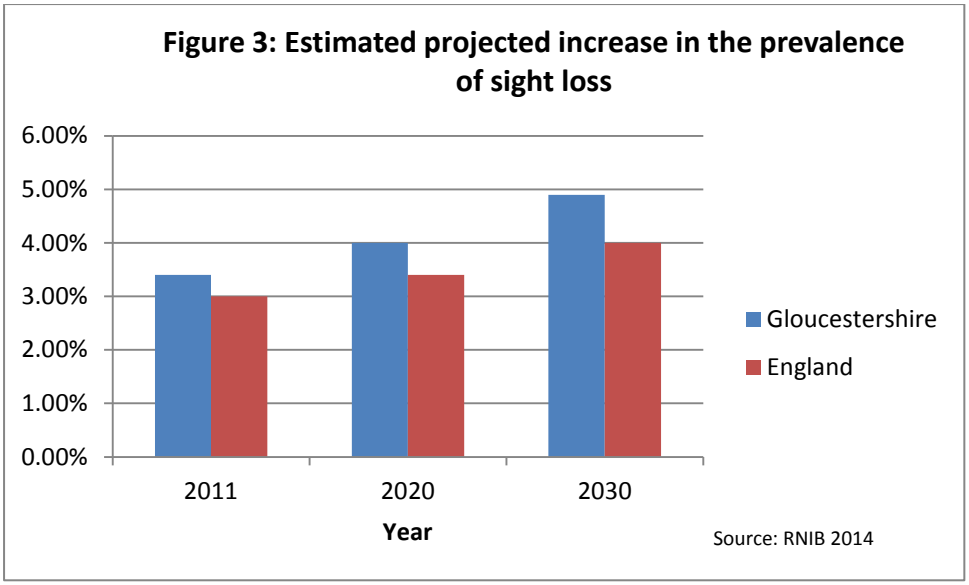
3.12 Obesity is the primary risk factor for the development of type 2 diabetes, which can lead to the development of diabetic eye disease. Data from the Active People Survey 2012 indicates that 22.9% of the adults in Gloucestershire are obese (BMI ≥ 30) and 63.8% are overweight or obese (excess weight) (BMI ≥ 25); both values are in line with the national average.[29] However prevalence levels vary between districts; and the percentage of obese adults in Gloucester district (30.3%) is significantly higher than the national average.

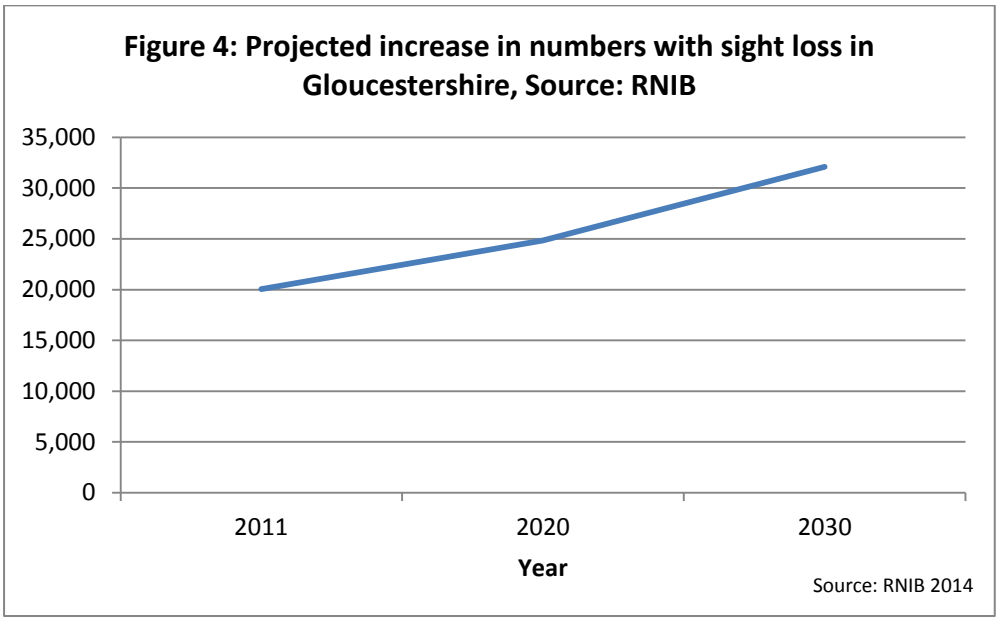
3.13 According to 2012/13 QOF data, there were 52,888 GP patients (aged 16 plus) on the obesity register (giving a prevalence of 10.35%).[30] This is likely to represent around half of the total expected prevalence of obesity. Appendix 1 shows the variation in recorded prevalence by practice; with the highest prevalence recorded in Springbank surgery in Cheltenham (19.9% significantly higher than the county prevalence of 10.35%). A further seven practices have prevalence levels over 15%, four of which are in the Forest of Dean.

Overall prevalence of visual impairment and sight loss in Gloucestershire

3.14 Modelled data from the RNIB based on the 2011 census, indicates that there were 20,060 people living with sight loss in Gloucestershire in 2011; of which 2450 people (12.2%) were estimated to have severe sight loss (blindness).

3.15 Overall the estimated prevalence of sight loss in the county was 3.4% compared to an England prevalence of 2.95%. The RNIB do not provide confidence intervals so we cannot determine whether the local rate is significantly higher statistically than the national rate. Figures 3 and 4 show how the rate of sight loss is projected to increase through to 2030. The difference between prevalence in Gloucestershire compared to the England average is likely to be explained by the county's age profile; and the fact that the Gloucestershire population is projected to continue ageing at a faster rate than the country as a whole.





Prevalence among children and young people

3.16 Most blind and partially sighted children are born with their vision impairment; and two-thirds are diagnosed before their first birthday. The single most common cause of vision impairment in children is cerebral vision impairment. Children at most risk of severe vision impairment or blindness are those who are born pre-term and of very low birth weight, from socio-economically disadvantaged backgrounds, or of South Asian origin. Evidence also shows that vision impairment is more likely to go undetected in children with additional disabilities, in children from some Asian ethnic groups and in children from deprived

backgrounds. There is also a high prevalence of blindness and partial sight in children with learning disabilities (LD).[31]

3.17 At least 50% of children and young people with vision impairment have additional disabilities and/or chronic health problems[32] which will need to be considered when planning health and social care packages. According to an evidence review carried out by the RNIB, children with vision impairment are at risk of poor outcomes across a range of emotional and social wellbeing indicators and the risks are even greater for children with vision impairment and another disability.[33]

3.18 RNIB modelled estimates based on 2011 census data, indicate that there are a total of 229 blind and partially sighted children aged 0-16 in Gloucestershire; and 128 aged 17-25 (table 3). In 2013 a total of 80 pupils in the county had a statement of special educational needs (SEN) (or were assessed as being at School Action Plus) with visual impairment as their primary need; 39 at primary school and 41 at secondary school. As table 4 shows the proportion of pupils with visual impairment as their primary SEN is above the regional and national average, notably in secondary schools. The reasons for this are unclear.

Table 3: Blind and partially sighted population: children and young people
Source: RNIB, census 2011

Age group	Blind	Partially sighted	Total
0-16	57	172	229
17-25	32	96	128

Table 4: Proportion of pupils with visual impairment as primary SEN
Source: DfE, 2013

	Gloucestershire	South West	England
Primary school	1.7%	1.1%	1.3%
Secondary school	2.7%	1.5%	1.5%

3.19 All children aged 4-5 years have their vision assessed as part of the 'School Entry Health Check'. The check looks for a number of vision defects including amblyopia (lazy eye), refractive error and strabismus (squint). The checks will only be done with parental consent; however from September 2013 Gloucestershire moved to a 'opt out' strategy from an 'opt in' strategy to promote uptake.

3.20 In Gloucestershire the screening programme only runs in mainstream state schools; which means that the sample will not include children who are privately or home educated,

or children in special schools. As such the programme may not provide a true assessment of need.

3.21 In September 2013 the county also introduced a new style of test (replacing the Snellen-based vision test with the Crowded logMAR system). This has led to improvements in coverage and increased the accuracy of referrals. In 2013/14, 6,157 children in mainstream education were screened; and three children were not screened. A total of 743 were referred for further checks (12.1%).

3.22 Based on ONS population data, we estimate that there were a total of 6,891 four year olds in the county in 2013; which would mean that the screening programme achieved coverage of 89.3% across the eligible population. The majority of the shortfall in coverage can be explained by the fact that the screening programme only operates in mainstream education settings.

3.23 Data on the outcome of referrals in the 2013/14 school year is not yet available; however an audit has been carried out on a sample of children referred for follow-up in the 12/13 programme. In 2012/13, 237 children were referred (note: the higher referral rate in 13/14 is due to the improved coverage and accuracy achieved with the introduction of the new testing system and does not necessarily reflect increased need).

3.24 Out of a sample of 50% of the children referred in 2012/13:

- 83% had a refractive error of which 85% were prescribed corrective spectacles.
- 16% required amblyopia therapy/occlusion (though this is likely to be an underestimation as many children were in the early stage of refractive adaptation at the time the audit was completed).
- 4% were referred on to an Ophthalmologist; and
- 18% were false positives.
- The DNA rate was 8%.

Incidence rates: new certifications

3.25 A Certificate of Vision Impairment (CVI) formally certifies a person as either sight impaired (partially sighted) or severely sight impaired (blind). CVI's are completed by a consultant ophthalmologist, and a copy is sent to the local social services department, providing a route to social care services.

3.26 The Public Health Outcomes Framework uses certification to measure avoidable sight loss in England. There are four indicators within the Public Health Indicator for Avoidable Sight Loss: the overall rate of certification (all ages) and rates of certification as a result of AMD (65 and over), glaucoma (ages 40 and over) and diabetic retinopathy (ages 12 and

over). These indicators provides a measure of incidence (i.e. the rate of new diagnoses in a given time period).

3.27 A total of 255 CVI's were issued in Gloucestershire in 2012/13. The rate of CVIs issued is in line with the England average (42.3 per 100,000 in both cases 2012/13).[34] While trend data is only available back to 2010/11, this indicates that the rate of certifications locally has been relatively consistent over this period.

3.28 Table 5 shows the rate of CVIs issued in Gloucestershire by cause in 2012/13. In all cases the local rate is in line with the national rate. The rate for AMD is significantly higher than that for diabetic eye disease and glaucoma (note: the data is not split by wet and dry AMD). Trend data indicates that certifications for diabetic eye disease and glaucoma have been flat since 2010/11. There appears to be some indications of a slight increase in certifications for AMD, but we would need additional data to determine if this is a sustained upward trend.

Table 5: Crude rate of sight loss per 100,000 by condition 2012/13; based on CVIs issued Source: PHOF

	Number issued Gloucestershire	**Rate Gloucestershire (%)**	**Rate England (%)**
Diabetic eye disease (12 plus)	22	4.2	3.5
Glaucoma (40 plus)	39	12	12.5
AMD (65 plus)	125	106.8	104.4

Registrations

3.29 Registers of blind and partially sighted people are maintained by all Local Authorities. Completion of a CVI initiates the process of registration and the opportunity to access support from social services.

3.30 As of June 2014, there were a total of 3,197 service users with a visual impairment registered with Gloucestershire County Council (GCC); off which a total of 543 (17%) were in receipt of adult social care.

3.31 It is important to note that registration is a voluntary choice. The GCC list only contains those people who have approached the council for either advice or support; and will not necessarily represent the total level of need in the county. Table 7 shows the breakdown of registrations by district for individuals who are sight impaired (SI) or severely sight impaired (SSI). Registrations are higher in the urban areas of Gloucester and Cheltenham, which may reflect socio-economic factors. It is notable that registrations are lower in Cotswolds, Tewkesbury and the Forest of Dean, despite the older age profile of these districts which

would typically result in a higher prevalence of PSB. This again suggests that 'registration' for visual impairment may not reflect true need; and, that some visually impaired individuals who might be eligible for social care support aren't being picked up in the system.

3.32 It is also interesting to note the number of service users with additional disabilities, highlighting the importance of considering co-morbidities when planning care (table 6).

Table 6: Additional disabilities among service users registered with a visual impairment, June 2014
Source: Gloucestershire County Council

Additional condition	Number of service users	Proportion
Other Physical impairment	1,154	36%
Hearing Impaired	430	13.5%
Stroke	245	7.7%
Dementia	230	7.2%
Mental Health (Other)	210	6.6%
Acquired Physical Injury	170	5.3%
Cancer	139	4.3%
Neurological (Other)	131	4.1%
Learning Disability	100	3.1%
Chronic Obstructive Pulmonary Disease	34	1.2%
Acquired Brain Injury	22	0.7%
Autism	15	0.5%

Table 7: Registrations for visual impairment by district, June 2014 Source: Gloucestershire County Council								
Category	**Cheltenham**	**Cotswolds**	**Forest of Dean**	**Gloucester**	**Stroud**	**Tewkesbury**	**Out of county**	**Total**
Severely sight impaired	297	211	193	281	282	175	13	1452
Sight impaired	311	187	236	332	326	204	18	1614
Dual sensory impairment	26	12	30	23	25	15		131
Total	**634**	**410**	**459**	**636**	**633**	**394**	**31**	**3197**

Limitations of certifications and registrations as an indicator of need

3.33 Nationally the number of new certifications and registrations has seen a continuing decline over the last 10 years; despite the ageing population and predicted increases in those with sight loss. Between 2003 and 2011, the number of new blind registrations fell by 30% and the number of new partially sighted registrations by 28%.[35] This has led to doubts over the reliability of the data as a true indication of incidence and prevalence.[36]

3.34 According to research commissioned by the RNIB, the causes of the decline are unclear; however there is evidence to suggest that clinicians are not always offering certification to individuals who may be eligible; and that patients are not always aware of the benefits of certification and registration; and as a result are not taking up the opportunity[37]. Notably, evidence suggests that people from minority ethnic groups are three times more likely to be unregistered [38] and that registration is lower amongst those with sight impairment compared to those who are severely sight impaired.

3.35 It is recommended that awareness of the certification and registration process, experience of using the system and uptake is explored through the stakeholder research focusing on the views of clinicians and service users.

Estimated expenditure on 'problems of vision'

3.36 The NHS England Programme Budgeting Benchmarking tool provides spend by CCG for individual programmes of care and care settings. The tool includes spend on the programme budgeting category 'problems of vision.'

3.37 Gloucestershire CCG's total expenditure on 'problems of vision' in 2012/13 was £26.2 million. The care setting with the highest spend was secondary care, in particular outpatient costs which accounted for over a third (35.5%) of total expenditure. Table 8 shows how the spend breaks down across activities and settings. Figure 5 shows how spend benchmarks with the ONS cluster average. Gloucestershire's spend on outpatient costs is above the cluster average, while spend on inpatient care (elective and day care) is lower.

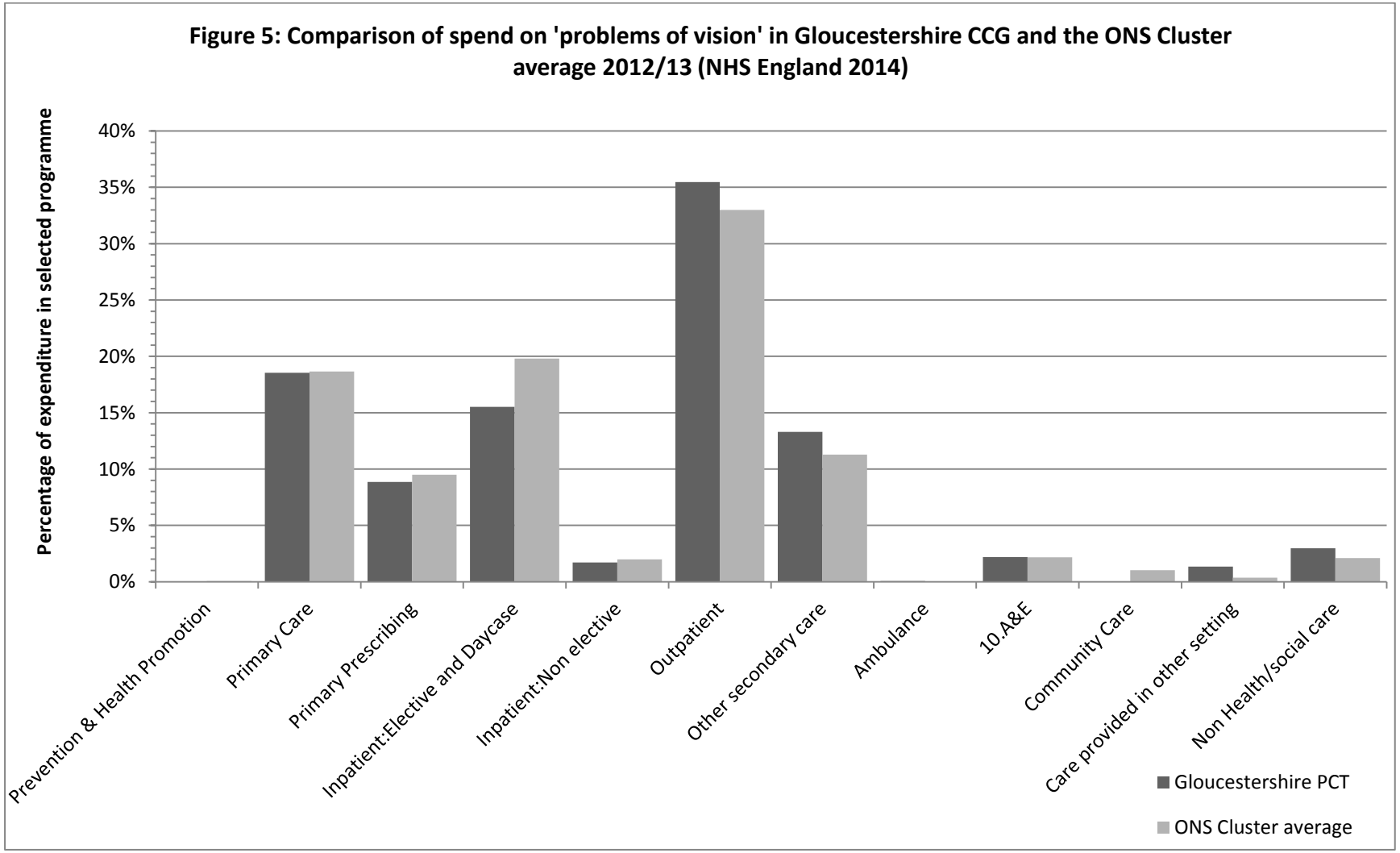
Table 8: Gloucestershire CCG expenditure on 'problems of vision' 2012/13
Source: NHS England Programme budgeting benchmarking tool (February 2014)

Activity	Estimated expenditure	Proportion of total spend
Prevention and health promotion	-	0%
Primary Care		
Primary care	£4,863,000	18.5%
Primary care prescribing	£2,324,000	8.9%

Secondary care		
Inpatient: elective & day cases	£4,073,000	15.5%
Inpatient: non-elective	£447,000	1.7%
Outpatient	£9,303,000	35.5%
Other secondary care	£3,485,000	13.3%
Urgent/emergency care		
Ambulance	£14,000	0.1%
A&E	£575,362	2.2%
Community Care	-	0%
Care provided in other settings	£356,000	1.4%
Non-health/social care	£782,000	3%
Total expenditure	**£26,222,362**	

3.38 As noted at 2.16, national expenditure on problems of vision has increased over the last decade and it can be assumed that spend in Gloucestershire will have followed the same trend.

Figure 5: Comparison of spend on 'problems of vision' in Gloucestershire CCG and the ONS Cluster average 2012/13 (NHS England 2014)



Section 4: Sight threatening eye conditions

4.1 This section presents available data on the main conditions causing visual impairment and sight loss in Gloucestershire. As noted at 1.4 the best available data is modelled estimates based on 2011 census data provided by the RNIB. The RNIB tool only provides numbers rather than prevalence which make it hard to make comparisons between Gloucestershire and other areas.

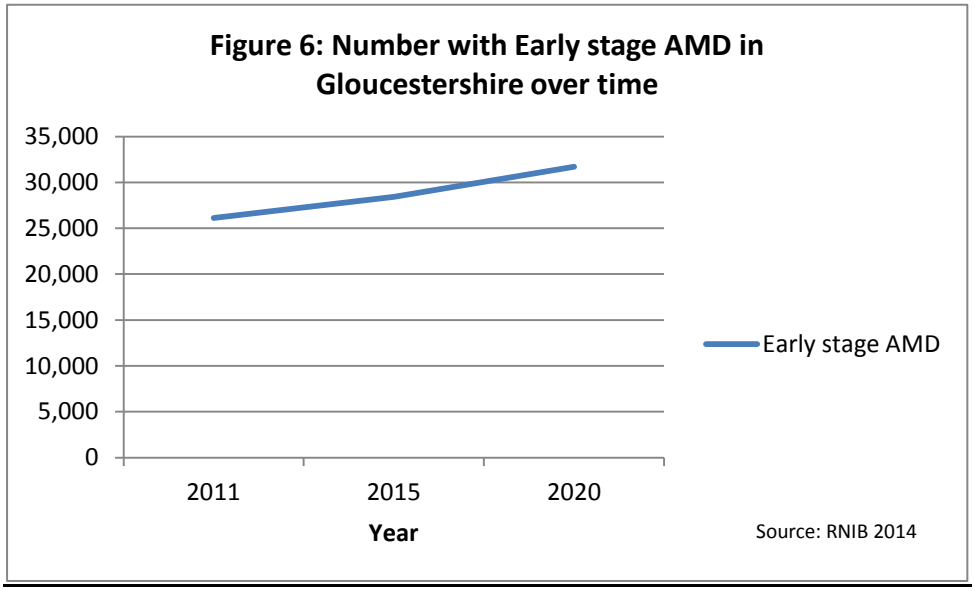
Age - related macular degeneration (AMD)

4.2 AMD is an incurable eye disease and is the leading cause of visual impairment in the UK. It is estimated that 16.7% of sight loss is attributable to AMD. There are two main types of AMD, dry and wet. Dry AMD is the most common and least serious type of AMD, accounting for around nine out of 10 cases. The loss of vision is gradual, occurring over many years. There is no cure or treatment, and an estimated one in 10 people will go on to develop wet AMD. Wet AMD is more serious and without treatment, vision can deteriorate within days. Early diagnosis and treatment is essential in reducing the risk of severe loss of vision.[39]

4.3 Risk factors for AMD include smoking, increasing age and family history. The condition is most common in people over 50 and it's estimated that one in every 10 people over 65 have some degree of AMD.[40]

4.4 Table 9 provides the estimated prevalence of AMD and modelled estimates for the number of people living with AMD in Gloucestershire. While the estimated prevalence of AMD in the county is slightly higher than the national average, confidence intervals are not provided by NEHEM (the data source) and as such we cannot say whether the difference is statistically significant. Figures 6 and 7 show how the number affected is projected to increase over time. We can assume that much of the projected increase can be attributed to the county's ageing population. As noted at 3.28, there appears to have been an increase in the number of new certifications for AMD since 2010/11 in Gloucestershire.

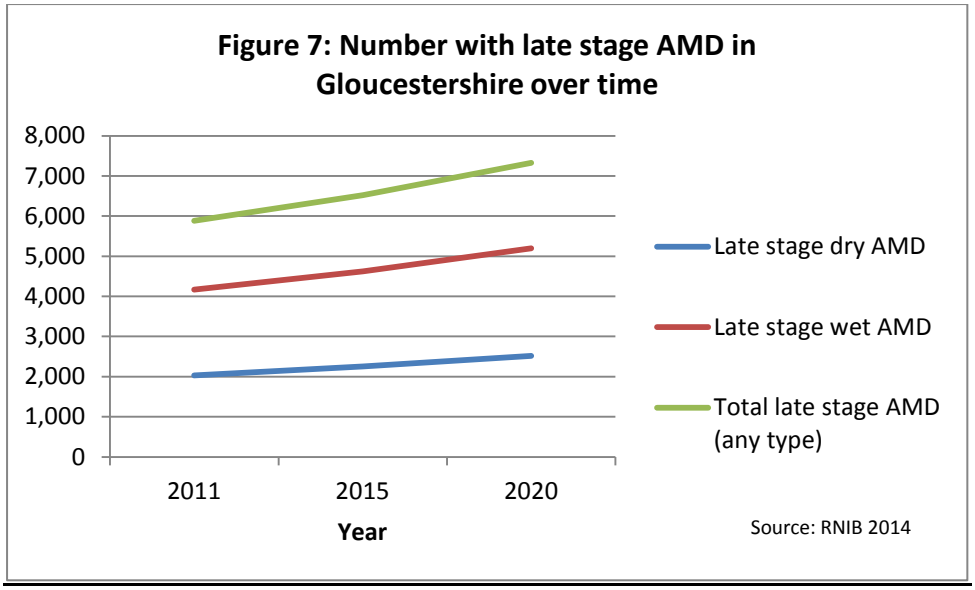
Table 9: Number of people with AMD in Gloucestershire Source: NEHEM; RNIB 2014 (modelled estimates based on 2011 census)						
	Estimated national prevalence[ii]	**County prevalence 2011[iii]**	**Number by year[iv]**			**% increase**
			2011	**2015**	**2020**	**2011-2020**
Early stage AMD	-	-	26,128	28,426	31,705	21.3%
Total late stage AMD (any type)	2.45%	2.56%	5,880	6,524	7,327	24.6%
Late stage dry AMD	-	0.88%	2,031	2,252	2,520	24%
Late stage wet AMD	-	1.81%	4,170	4,623	5,199	24.6%



[ii] Estimated national prevalence from NEHEM data cited in RNIB (January 2014) Sight loss: a public health priority, RNIB

[iii] Calculated by GCC SNAT based on 2011 population estimates using the National Eye Health Epidemiological Model (NEHEM)

[iv] RNIB 2014 modelled estimate.



Cataracts

4.5 A cataract is a clouding of the eye's natural lens which over time can reduce vision. Increasing age is the main risk for the development of cataracts; however evidence also suggests a link with smoking, diabetes and ultraviolet light exposure. Most cataracts can be treated effectively by surgery.

4.6 Table 10 shows the estimated prevalence and modelled estimates for the number of people living with cataracts in Gloucestershire through to 2020. While the estimated prevalence of cataract in the county is slightly higher than the national average, confidence intervals are not provided by NEHEM (the data source) and as such we cannot say whether the difference is statistically significant. The projected increase in the number of people affected by cataracts is likely to be largely explained by the county's ageing population.

Table 10: Number of people living with cataracts in Gloucestershire
Source: RNIB (modelled estimate based on 2011 census)

Cataract	**Estimated national prevalence[v]**	**County prevalence[vi]**	**Number by year[vii]**			**% increase**
		2011	**2011**	**2015**	**2020**	**2011-2020**
	1.88%	1.99%	6,369	7,132	8,148	27.9%

[v] Estimated national prevalence from NEHEM data cited in RNIB (January 2014) Sight loss: a public health priority, RNIB
[vi] Calculated by GCC SNAT based on 2011 population estimates using the National Eye Health Epidemiological Model (NEHEM)
[vii] RNIB 2014 modelled estimate.

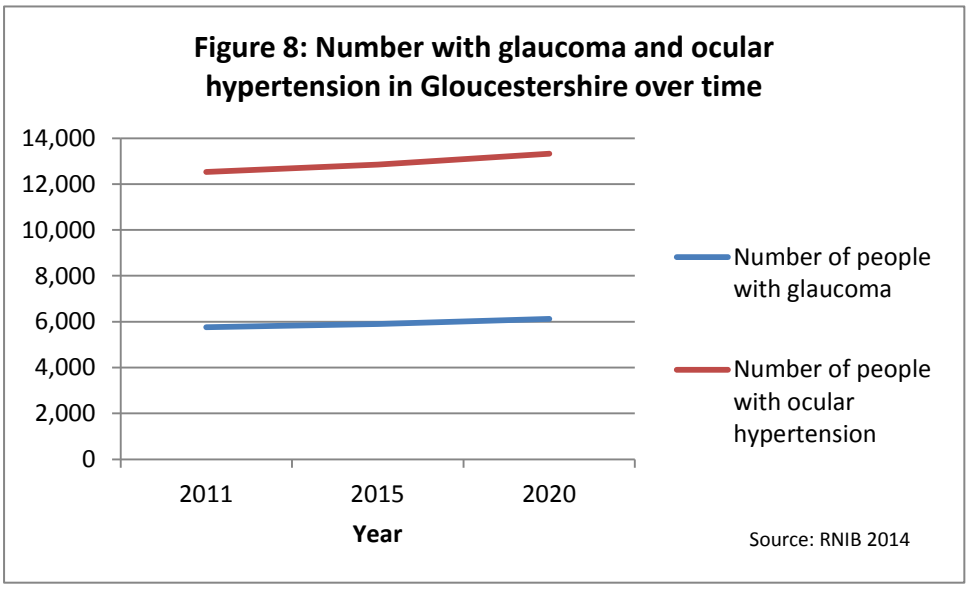
Glaucoma

4.7 Glaucoma is a disease which damages the optic nerve and can lead to blindness. Nationally 5.3% of partial sight and blindness is attributable to the condition. The most common type is chronic open-angle glaucoma which affects up to two in every 100 people over 40 years old and around five in every 100 people over 80 years old.[41] The condition typically develops slowly, and there are usually no noticeable symptoms meaning that cases often go undiagnosed. Eye tests can help detect the condition, which underlines the importance of encouraging uptake. As noted at 2.10, there is evidence to suggest that people from black-African or black-Caribbean origin are more at risk of developing glaucoma.

4.8 People with ocular hypertension (in which the pressure inside the eye in higher than normal) are considered potential 'glaucoma suspects'. This group requires regular monitoring and some treatment to prevent the development of glaucoma. One study found that the 'conversion rate' to glaucoma was 9% over five years in untreated patients with ocular hypertension, compared to 4.4% in treated individuals.[42] As with glaucoma, increasing age is a factor in the development of ocular hypertension.

4.9 Table 11 shows modelled estimates for the number of people with glaucoma in and ocular hypertension in Gloucestershire and figure 8 shows the projected increase through to 2020. While the estimated prevalence of glaucoma in the county is slightly higher than the national average, confidence intervals are not provided by NEHEM (the data source) and as such we cannot say whether the difference is statistically significant.

	Table 11: Number of people living with glaucoma and ocular hypertension in Gloucestershire Source: RNIB (modelled estimate based on 2011 census)					
			Number by year[viii]			
	National prevalence[ix]	County prevalence[x]	2011	2015	2020	% increase 2011-2020
Glaucoma	1.47%	1.6%	5,754[xi]	5,905	6,124	6.4%
Ocular hypertension	-	3.2%	12,526	12,854	13,331	6.4%



Diabetic retinopathy

4.10 Diabetic retinopathy is a complication of diabetes and usually affects both eyes. Diabetic retinopathy is the leading cause of preventable sight loss among working age people in the UK. The disease responds well to early intervention however they are often no early symptoms meaning that cases can go undiagnosed. A national diabetic retinopathy screening programme was introduced in 2003 to help improve detection.

4.11 Based on 2012/13 QoF data, the recorded county prevalence of diabetes is 6.1%, compared to a national prevalence of 6%.[43] Countywide, there were 30,682 patients on the

[viii] RNIB 2014 modelled estimate.
[ix] Estimated national prevalence from NEHEM data cited in RNIB (January 2014) Sight loss: a public health priority, RNIB
[x] Calculated by GCC SNAT based on 2011 population estimates using the National Eye Health Epidemiological Model (NEHEM)
[xi] Note: local calculations carried out by GCC SNAT give a slightly higher estimate of 6,266; a difference of approximately 8%.

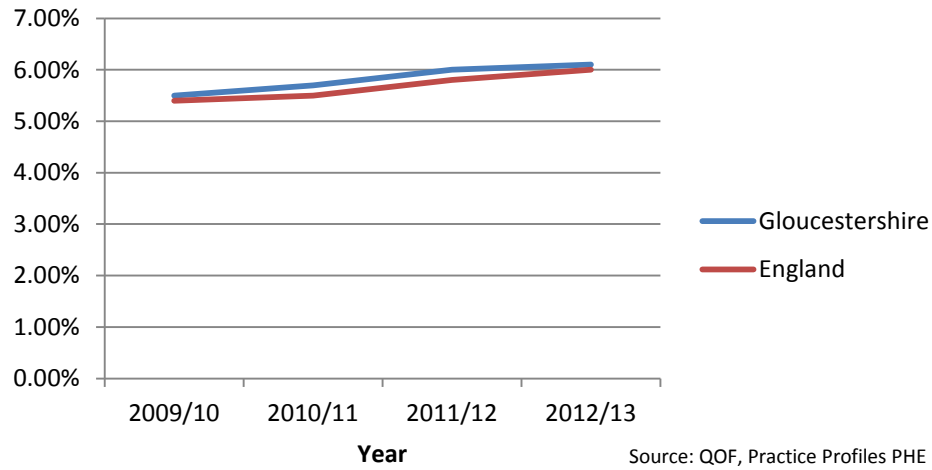
diabetic register in 2012/13. [44] The estimated *total* prevalence of diabetes is 7%, which would equate to a further 4,746 adults with undiagnosed diabetes in the county.[45]

4.12 The PHE General Practice Profiles provide trend data on recorded diabetes prevalence back to 2009/10. This shows that even over this relatively short time frame, recorded prevalence in Gloucestershire has been steadily increasing, from 5.5% in 2009/10 to 6.1% in 2012/13 (figure 9). If current trends in population change and obesity persist, prevalence is projected to continue increasing. While diabetic retinopathy screening should improve rates of early detection, rising diabetes is still likely to mean a corresponding increase in the prevalence of the condition. Based on national data, prevalence could be as high as 28% among people diagnosed with diabetes.

4.13 It is important to note that the prevalence of diabetes varies significantly between both CCG localities and individual practices. Two localities, Forest of Dean and Gloucester City, have recorded prevalence significantly above the CCG average at 7.3% and 6.9% respectively (derived from aggregated QOF data). The highest prevalence 9.4% is recorded in two practices: London Road Medical Practice in Gloucester locality and Stonehouse Health Clinic in Stroud and Berkeley Vale locality. This is likely to mean a corresponding increase in the risk of diabetic retinopathy in these areas.

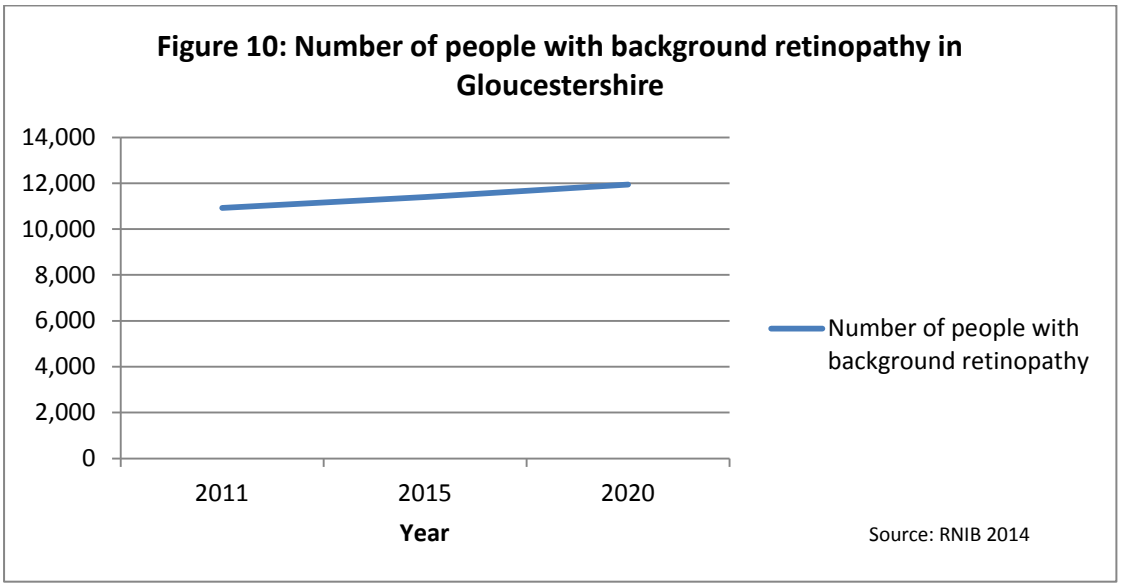
4.14 Table 12 shows modelled estimates from the RNIB for the number of people with background diabetic retinopathy in the county; and figure 10 shows the projected increase through to 2020.

Figure 9: prevalence of diabetes increase over time



Source: QOF, Practice Profiles PHE

Table 12: Number of people with background diabetic retinopathy in Gloucestershire Source: RNIB (modelled estimate based on 2011 census)				
	Year			**% increase**
	2011	**2015**	**2020**	**2011-2020**
Number of people with background retinopathy	10,920	11,403	11,944	9.4%



District level data

4.15 The National Eye Health Epidemiological Model (NEHEM) provides prevalence data on a number of common visual conditions down to local authority level based on 2011 Census population data. Table 13 and figures 11-13 provide data on prevalence of cataract, glaucoma and AMD for each of the six Gloucestershire districts.

4.16 It is difficult to discern any distinctive trends from the district level data. NEHEM does not provide confidence intervals meaning that we cannot calculate whether any differences between the districts are statistically significant. However prevalence levels appear to be highest in Cheltenham and Cotswolds. Prevalence in Cotswold is likely to be explained by the older age profile of the district.

4.17 As noted previously, low income is also a risk factor for visual impairment. Data from the Indices of Multiple Deprivation shows that Gloucester and Cheltenham have the highest levels of deprivation in the county. This means that we might expect to see higher

prevalence in these districts; despite the tendency for urban parts of the county to have a younger age profile.

Table 13: Estimated prevalence of common eye conditions by district **Source: NEHEM based on 2011 census population data**								
Condition	**Cheltenham**	**Cotswold**	**Forest of Dean**	**Gloucester**	**Stroud**	**Tewkesbury**	**County prevalence**	**National Prevalence**
Cataracts	2.12	2.16	1.95	1.80	1.94	2.01	1.99	1.88
Glaucoma	1.56	1.74	1.63	1.52	1.59	1.61	1.6	1.47
AMD- all cases	2.8	2.7	2.43	2.41	2.46	2.55	2.56	2.45
NV-AMD (wet)	1.99	1.91	1.72	1.71	1.75	1.81	1.81	1.73
Geographic atrophy (dry)	0.97	0.93	0.84	0.83	0.85	0.88	0.88	0.86

Figure 11: Cataract prevalence by district, 2011 (%)

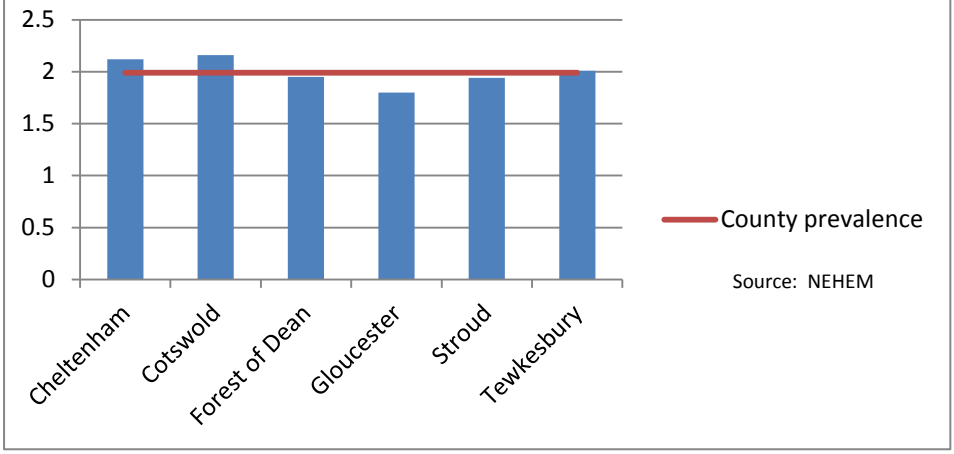


Figure 12: Glaucoma prevalence by district, 2011 (%)

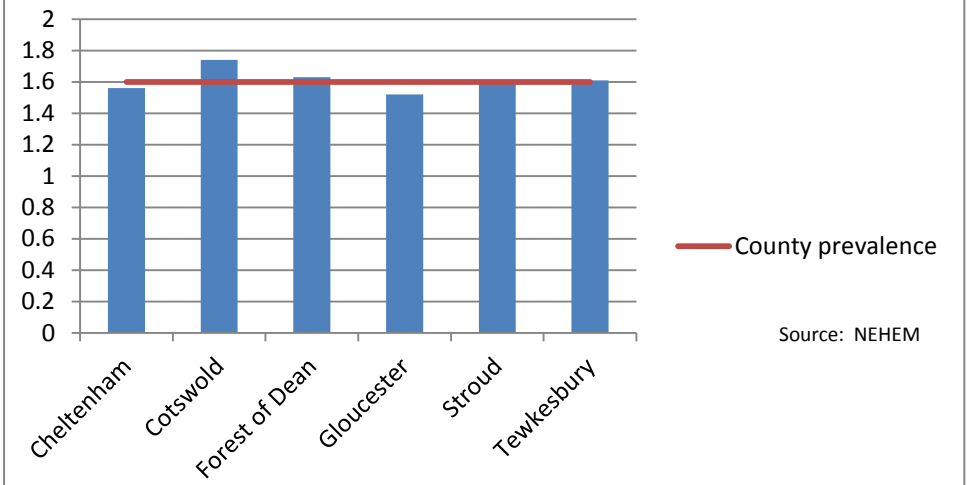
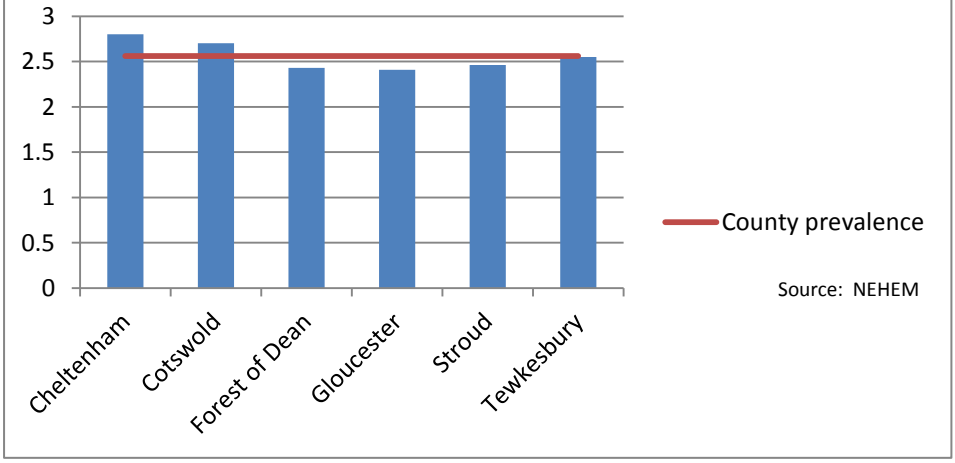


Figure 13: AMD prevalence by district, 2011 (%)



Section 5: Early identification: NHS Sight tests and diabetic retinopathy screening

NHS Sight tests

5.1 Regular sight tests present an opportunity to detect reduced vision and early signs of eye disease so that corrective spectacles (if appropriate) or treatment can be sought. Sight tests can pick up a number of eye conditions, including refractive error and glaucoma before symptoms may become apparent.

5.2 Published data on sight tests is only available for tests provided on the NHS and does not include eye tests which are privately funded. The latest national data available on the proportion of privately funded eye tests compared to NHS sight tests is from 2005/06. At this time, 31.4% of eye tests in Britain were conducted privately and 68.6% were paid for by the NHS.[46] However year on year the number of NHS sight tests has steadily increased over the last decade[47] which may have resulted in a corresponding decrease in the number of privately funded tests since the study was carried out.

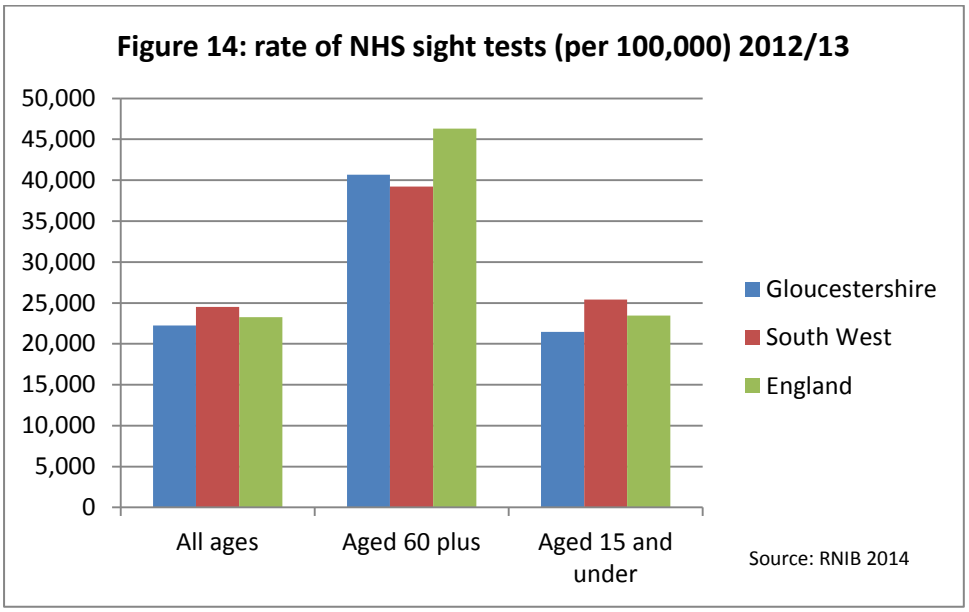
5.3 People are eligible for an NHS sight test under a number of different criteria, including children aged 16 and under, students in full time education (aged 16-18), those aged 60 plus, and individuals in receipt of certain benefits. Individuals registered as partially sighted or blind, or those diagnosed with diabetes or glaucoma (or with a family history of glaucoma) are also eligible.

5.4 There were a total of 133,560 eye tests in the county in 2012/13; equivalent to a rate of 22,324 per 100,000 people. Figure 14 shows how the local rate compares to the regional and national rate. Overall uptake is in line with the national average, but given that Gloucestershire's population profile is older than the country as a whole, we might have reasonably expected a higher rate among over 60s than the national average. This may indicate scope to improve uptake in this group. Indeed nationally it is estimated that around half of over 60s do not have an annual eye test.[48]

5.5 Research commissioned by the RNIB[49] has identified a number of barriers to people taking up the offer of regular eye tests, in particular older people. These include:

- Absence of symptoms
- Concern about the cost of glasses/prescription, particularly among those on lower incomes, who it is suggested may also delay attendance until their experience symptoms.[50]
- Lack of knowledge of the entitlement
- Lack of awareness about the importance of eye tests for eye health.
- Transport restrictions.

5.6 There is also some evidence to suggest that people from minority ethnic groups may experience additional barriers to accessing eye services, including sight tests.[51] One study suggested that Black British communities are 20% less likely to have had an eye test than the rest of the population. As noted at 3.27, ethnic communities are also under represented in registrations for visual impairment. This is a particular issue given that some ethnic groups are at greater risk of eye disease. Language barriers have been cited as a factor in older generations; but some of the difference may also be explained by socio-economic factors. BME groups are typically over-represented among lower income households. As noted previously, low income is a factor in low uptake of services and late presentation. It is recommended that access to services and uptake among ethnic groups is explored through the service mapping.



Diabetic eye screening

5.7 Uptake of diabetic eye screening in Gloucestershire in 2012/13 amongst those invited to attend was 71.9%. While this meets the required minimum standard of uptake of 70% or above, it is significantly below the average national uptake of 79.1%.[52] Given the benefits of screening for early detection and treatment, this suggests room for improvement. The Gloucestershire diabetic screening programme team have recently purchased a mobile screening van with the aim of improving availability and accessibility. There are also several other initiatives in place to help improve coverage and uptake; these include the introduction of walk in clinics, patient surveys, alternative screening locations and the introduction of screeners as key workers with relevant departments, including paediatrics and diabetology.

5.8 Research looking at equity of uptake of diabetic retinopathy screening programme in Derbyshire[53] found that non-uptake was associated with deprivation and was more common in younger people (those aged under 40) and people with type 1 diabetes. The study also

highlighted the importance of a recommendation from a GP or other primary care physician on the likelihood of patients subsequently taking up the screening offer. One of the limitations acknowledged by the study was the lack of data on uptake by people from BME groups, as data on ethnicity is not routinely collected by the screening programme. It would be valuable to look at the availability of data on uptake by different demographic and ethnic groups in Gloucestershire in order to determine any variation.

5.9 According to QOF data (2012/13), on average 90.5% of people on the diabetic register in Gloucestershire had a record of retinal screening in the last 15 months (in line with the national average of 91.7%). However again there is variation at practice level; with the proportion of patients with a record of retinal screening falling to 55.8% in Matson Lane surgery (Gloucester locality) and 64.6% in Springbank Surgery (Cheltenham locality) (appendix 2).[54] There is scope for targeted engagement with practices to better understand these variations and work with them to improve coverage.

Section 6: Mapping of service provision

This section provides a limited overview of the geographical location of selected eye health services in Gloucestershire.

Diabetic retinopathy screening

6.1The Gloucestershire diabetic eye screening programme offers screening at GP practices, pharmacies and community centres. As noted, the programme has also recently purchased a mobile screening van to help improve accessibility.

6.2 Figure 15 indicates the location of GP practices offering screening. As might be expected, coverage is good in the urban centres of Gloucester and Cheltenham, but more limited in parts of the Forest of Dean, Cotswolds and Tewkesbury. It may be the case that screening is available in these districts at pharmacies and community centres, but this information has not been provided.

Eye health services provided in community opticians

6.3 Some community opticians in the county offer additional eye health services for glaucoma and/or cataract. Figure 16 shows the location of opticians offering additional services, and those that do not.

6.4 The most limited provision is in parts of the Cotswolds. Given the rural nature of the Cotswold district and its older population profile, there may be scope to improve accessibility; however this would need to be balanced against low population density which may mean services aren't viable in terms of footfall. Coverage in parts of the Forest of Dean and Tewkesbury is also more limited. These districts again have older age profiles (see 3.4); meaning that need for eye health services is likely to be higher; but also have lower population densities (figure 18).

Gloucestershire Hospital Trust (GHT) provided eye and vision clinics

6.4 Figure 17 shows the location of GHT provided eye and vision clinics. Overall coverage is good, but again more limited in parts of Cotswold district, Forest of Dean and Tewkesbury.

Figure 15

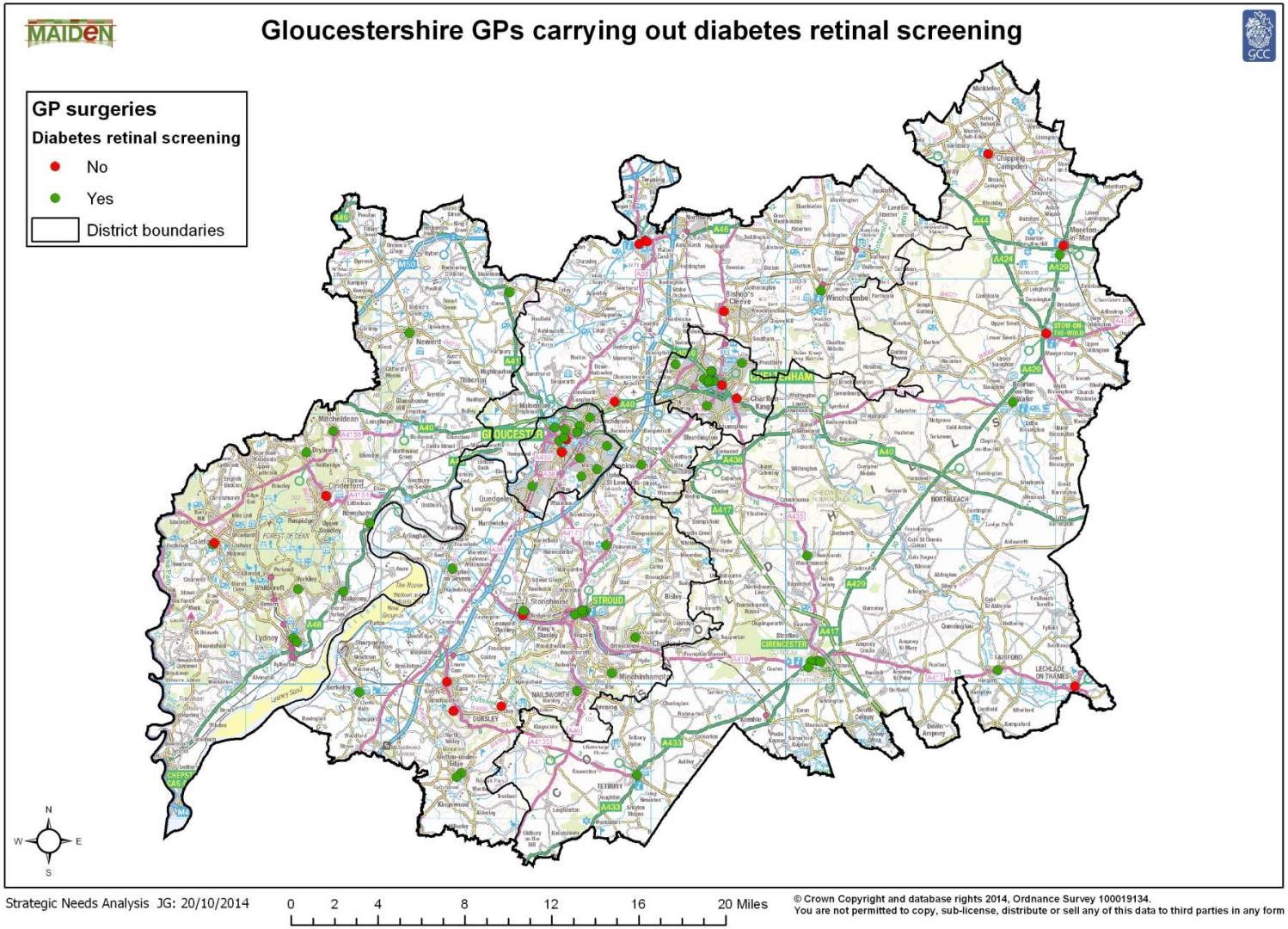

MAIDEN
Gloucestershire GPs carrying out diabetes retinal screening
GCC
GP surgeries
Diabetes retinal screening
No
Yes
District boundaries
GLOUCESTER
CHELTENHAM
STROUD
CIRENCESTER
TETBURY
DURSLEY
NAILSWORTH
N
W
E
S
Strategic Needs Analysis JG: 20/10/2014
0 2 4 8 12 16 20 Miles
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Figure 16

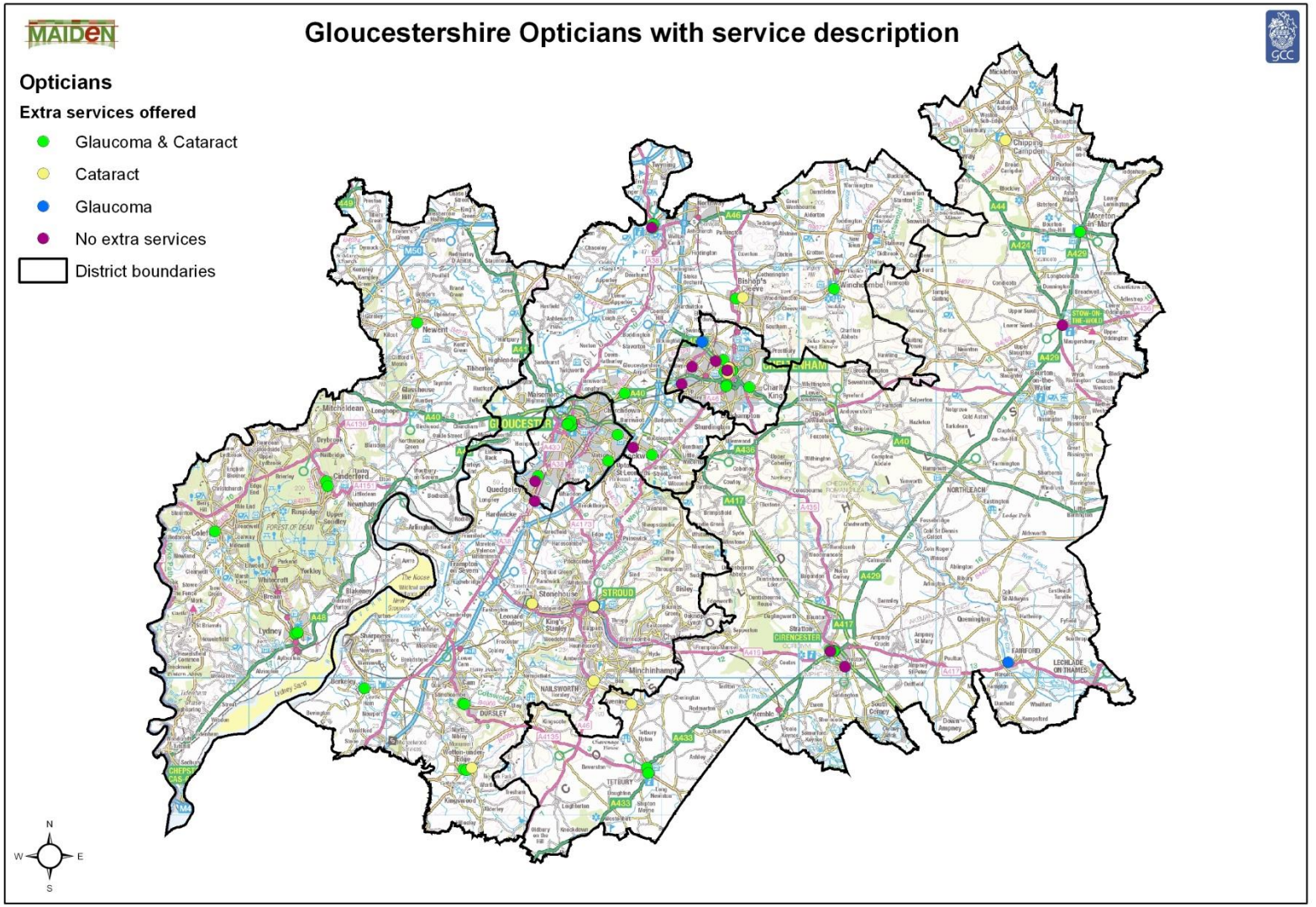
MAIDEN
Gloucestershire Opticians with service description
GCC
Opticians
Extra services offered
Glaucoma & Cataract
Cataract
Glaucoma
No extra services
District boundaries
N
W
E
S
Strategic Needs Analysis JG: 4/12/2014
0 2 4 8 12 16 20 Miles
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Figure 17

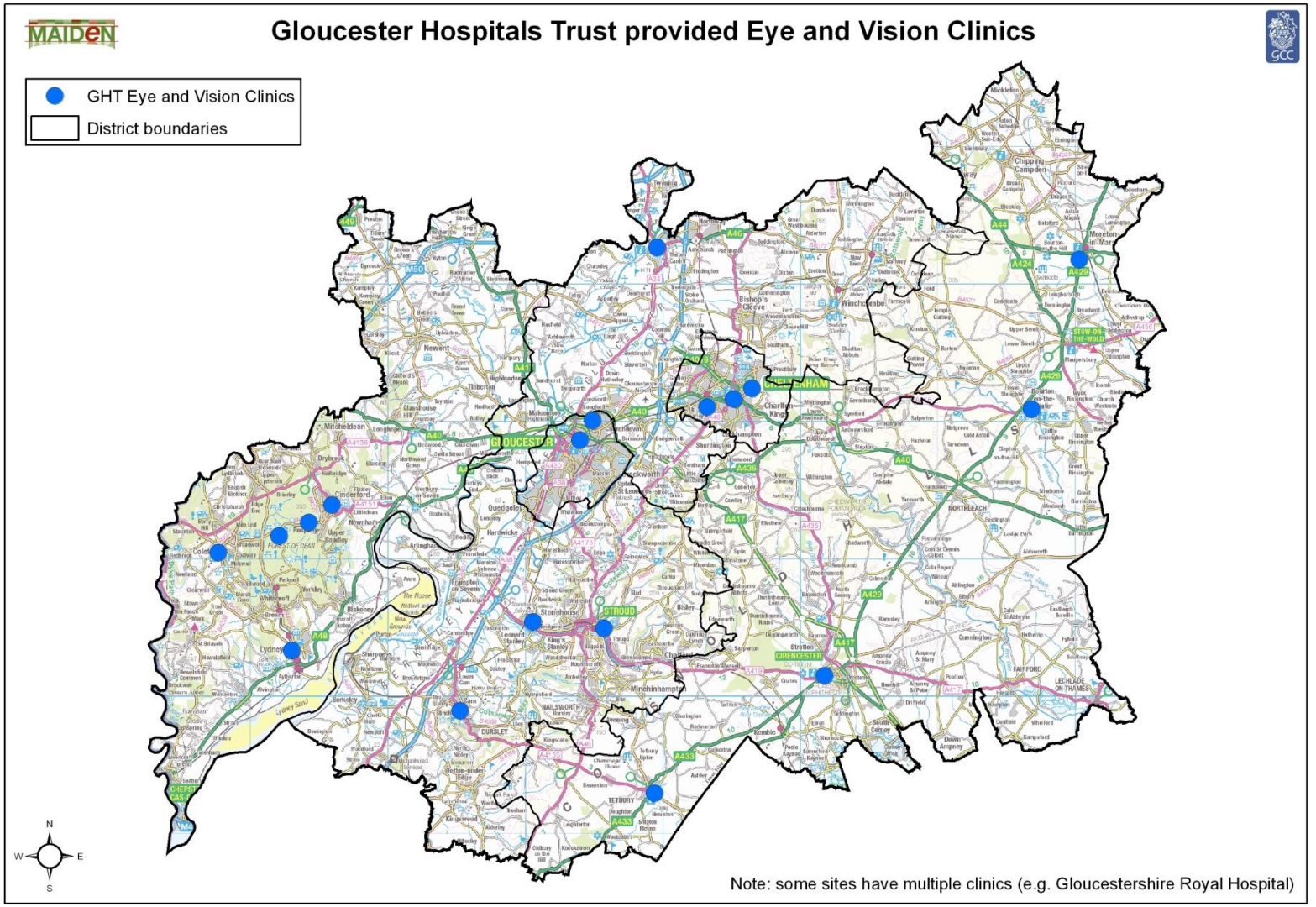
MAIDeN
Gloucester Hospitals Trust provided Eye and Vision Clinics
GCC
GHT Eye and Vision Clinics
District boundaries
GLOUCESTER
STROUD
CIRENCESTER
TETBURY
DURSLEY
NAILSWORTH
CHELTENHAM
TEWKESBURY
N
W
E
S
Note: some sites have multiple clinics (e.g. Gloucestershire Royal Hospital)
Strategic Needs Analysis JG: 14/11/2014
0 2 4 8 12 16 20 Miles
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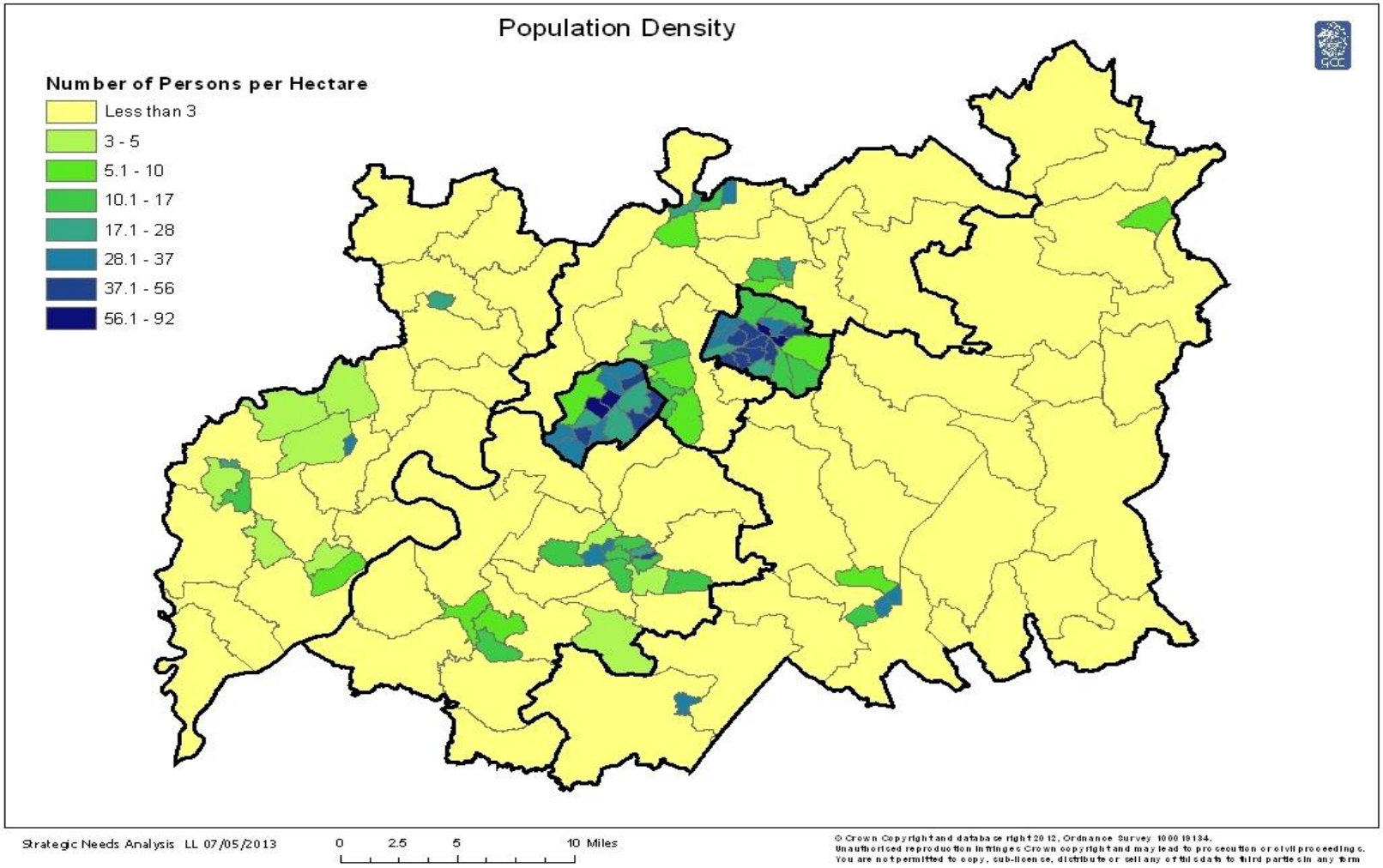
Figure 18


Population Density
Number of Persons per Hectare
Less than 3
3 - 5
5.1 - 10
10.1 - 17
17.1 - 28
28.1 - 37
37.1 - 56
56.1 - 92
Strategic Needs Analysis LL 07/05/2013
0
2.5
5
10 Miles
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Annex A: Definition of partial sight and blindness as used by RNIB in the 2009 Access Economics report

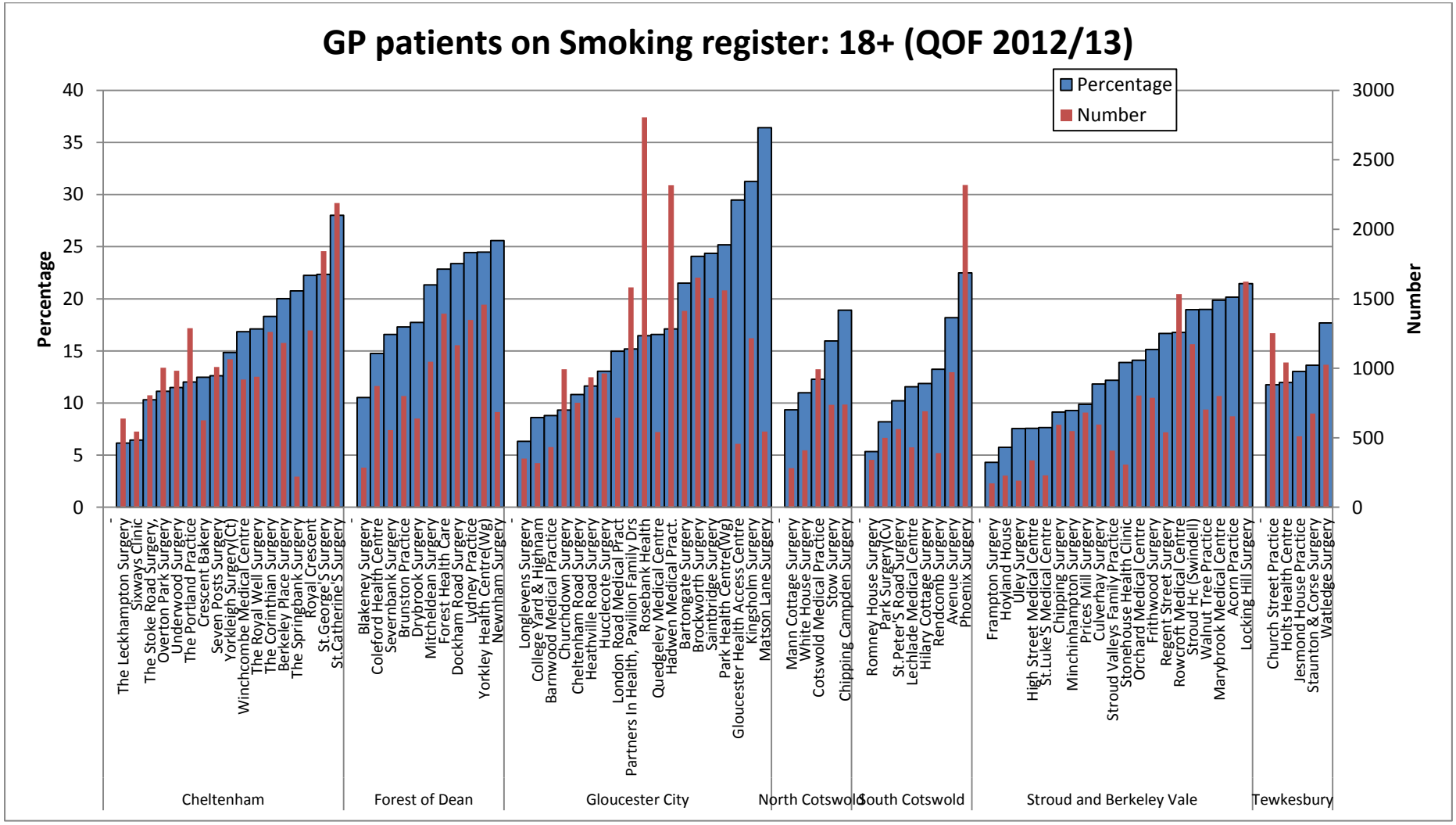
Access Economics, 2009. Future Sight Loss UK 1: The economic impact of partial sight and blindness in the UK adult population, RNIB.

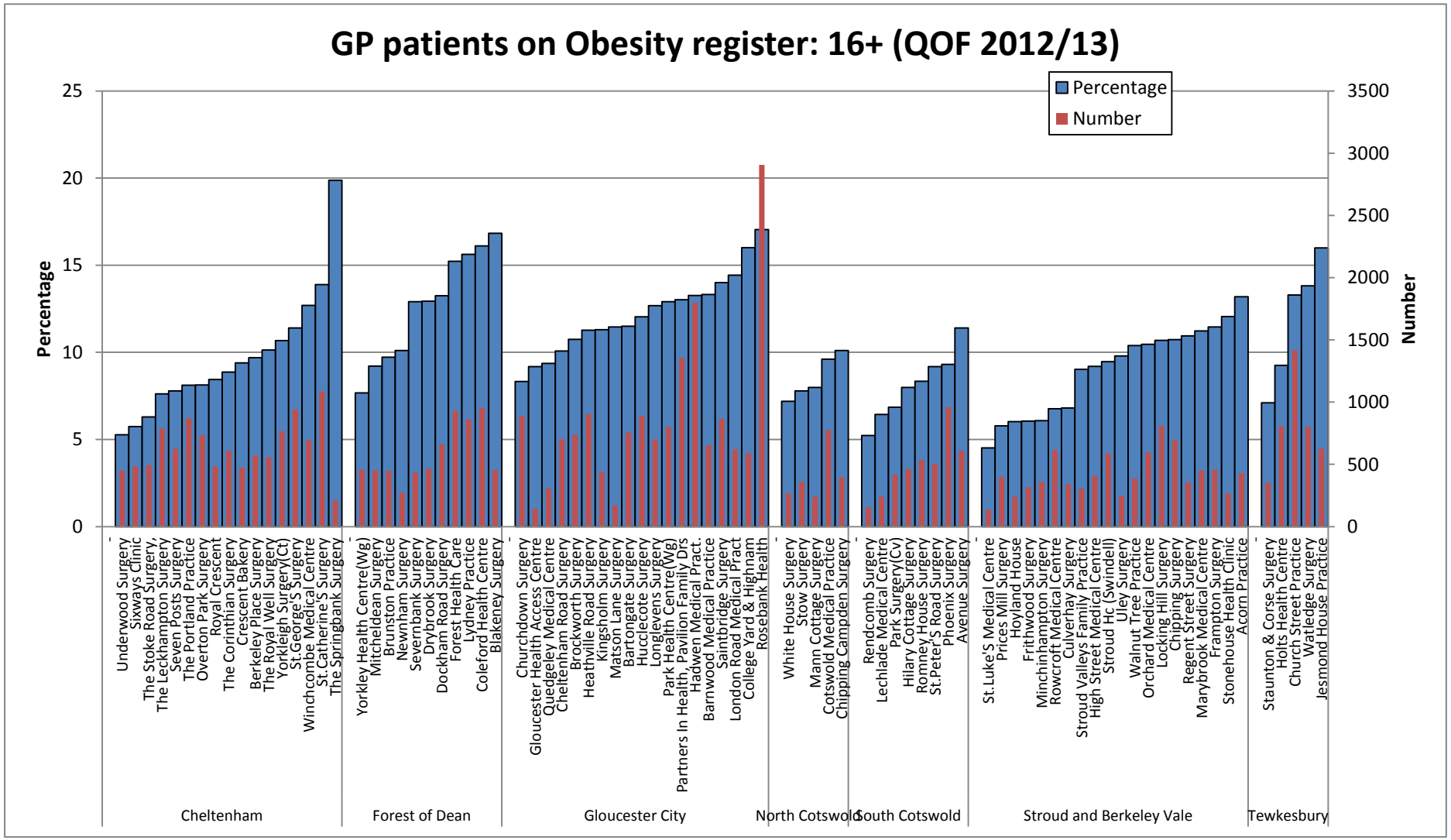
'Partial sight and blindness can be broadly defined as a limitation in one or more functions of the eye or visual system, most commonly impairment of visual acuity (sharpness or clarity of vision), visual fields (the ability to detect objects to either side or above or below the direction in which the person is looking), contrast sensitivity and colour vision.'

'Common definitions for visual acuity used in the UK:

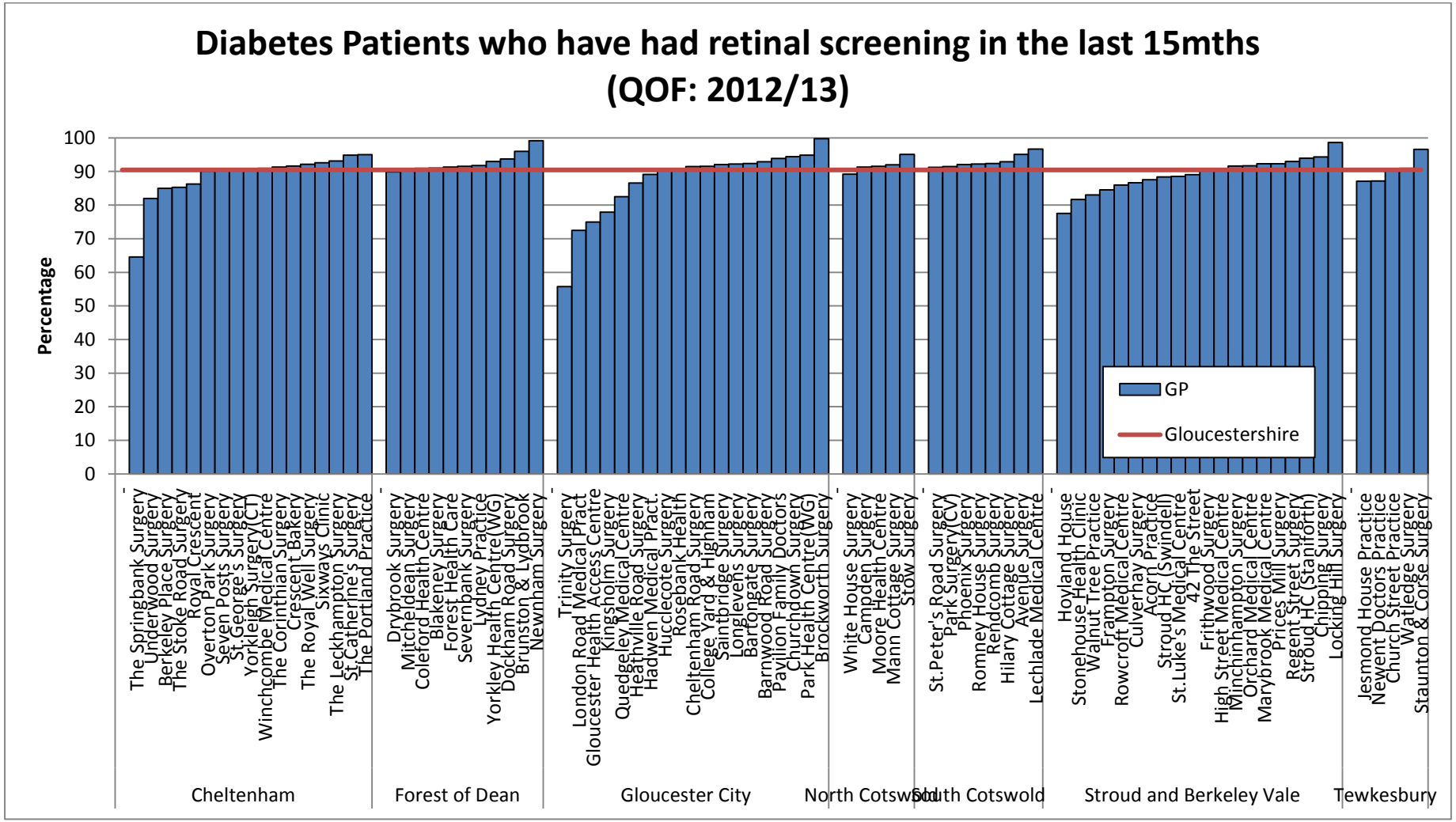
- Blindness (severe sight loss) is defined as best-corrected visual acuity of <6/60 in the better-seeing eye.
- Partial sight is defined as best –corrected visual acuity of <6/12 to 6/60 in the better-seeing eye, and is categorised as:
    - Mild sight loss- best corrected visual acuity of <6/12 but better than or equal to 6/18; and
    - Moderate sight loss – best corrected visual acuity of <6/18 but better than or equal to 6/60.'

Appendix 1: GP patients on obesity register and smoking register (QOF 2012/13)




GP patients on Obesity register: 16+ (QOF 2012/13)
Percentage
Number
Percentage
Number
0
5
10
15
20
25
0
500
1000
1500
2000
2500
3000
3500
-
Underwood Surgery
Sixways Clinic
The Stoke Road Surgery,
The Leckhampton Surgery
Seven Posts Surgery
The Portland Practice
Overton Park Surgery
Royal Crescent
The Corinthian Surgery
Crescent Bakery
Berkeley Place Surgery
The Royal Well Surgery
Yorkleigh Surgery(Ct)
St.George'S Surgery
Winchcombe Medical Centre
St.Catherine'S Surgery
The Springbank Surgery
-
Yorkley Health Centre(Wg)
Mitcheldean Surgery
Brunston Practice
Newnham Surgery
Severnbank Surgery
Drybrook Surgery
Dockham Road Surgery
Forest Health Care
Lydney Practice
Coleford Health Centre
Blakeney Surgery
-
Churchdown Surgery
Gloucester Health Access Centre
Quedgeley Medical Centre
Cheltenham Road Surgery
Brockworth Surgery
Heathville Road Surgery
Kingsholm Surgery
Matson Lane Surgery
Bartongate Surgery
Hucclecote Surgery
Longlevens Surgery
Park Health Centre(Wg)
Partners In Health, Pavilion Family Drs
Hadwen Medical Pract.
Barnwood Medical Practice
Saintbridge Surgery
London Road Medical Pract
College Yard & Highnam
Rosebank Health
-
White House Surgery
Stow Surgery
Mann Cottage Surgery
Cotswold Medical Practice
Chipping Campden Surgery
-
Rendcomb Surgery
Lechlade Medical Centre
Park Surgery(Cv)
Hilary Cottage Surgery
Romney House Surgery
St.Peter'S Road Surgery
Phoenix Surgery
Avenue Surgery
-
St.Luke'S Medical Centre
Prices Mill Surgery
Hoyland House
Frithwood Surgery
Minchinhampton Surgery
Rowcroft Medical Centre
Culverhay Surgery
Stroud Valleys Family Practice
High Street Medical Centre
Stroud Hc (Swindell)
Uley Surgery
Walnut Tree Practice
Orchard Medical Centre
Locking Hill Surgery
Chipping Surgery
Regent Street Surgery
Marybrook Medical Centre
Frampton Surgery
Stonehouse Health Clinic
Acorn Practice
-
Staunton & Corse Surgery
Holts Health Centre
Church Street Practice
Watledge Surgery
Jesmond House Practice
Cheltenham
Forest of Dean
Gloucester City
North Cotswold
South Cotswold
Stroud and Berkeley Vale
Tewkesbury

Appendix 2: Diabetic patients who have retinal screening in the last 15 months by practice (QOF 2012/13)



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