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**Why is the General Ophthalmic Services (GOS) contract that underpins primary eye care in the United Kingdom contrary to the public health interest?**

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## **Abstract**

The model for delivery of primary eye care in Europe varies from country to country with differing reliance on ophthalmologists, optometrists and dispensing opticians. Comparative analysis of models has tended to focus on inter-professional working arrangements, training and regulatory issues, rather than on whether a particular model is effective for delivering public health goals for that country. National Health Service (NHS) primary eye care services in the United Kingdom (UK) are predominantly provided under a General Ophthalmic Services (GOS) Contract between the NHS and practice owners (contractors). Over two thirds of sight tests conducted in England, Wales and Northern Ireland and all in Scotland are performed under a GOS contract, however many people entitled to a GOS sight test do not take up their entitlement. The fee paid for sight tests conducted under a GOS contract in England, Wales and Northern Ireland does not cover the full cost of conducting the examination. The shortfall must be made up through profits of sale of optical appliances but this business model can be a deterrent to establishing practices within socio-economically deprived communities, and can also be a barrier to uptake of sight tests, even though many people are entitled to a NHS Optical Voucher towards the cost of spectacles or contact lenses. This paper critiques the GOS Contracts within the UK. We argue that aspects of the way the GOS Contract is implemented are contrary to the public health interest and that different approaches are needed to address eye health inequalities and to reduce preventable sight loss.

**Key words**

Primary eye care, optometry, ophthalmology, General Ophthalmic Services

Contract, models of care

**Word count** 3,000

## **The need to review models for delivery of primary eye care services**

Models for primary eye care differ across Europe. In France,[1] 90% of all eye examinations are conducted by an ophthalmologist, with seamless pathways into hospital eye services. However, numbers of ophthalmologists in France are decreasing, leading to longer waiting times and more difficult access to primary eye care.[1] Falling numbers of ophthalmologists have been reported in other high-income countries[2] although this survey did not measure the wider ophthalmic team workforce nor obtain data about skills, geographic distribution, quality, productivity and the equity of the services provided. In Germany[1] both ophthalmologists and optometrists deliver primary eye care, however, optometrists are classified as 'craftsmen' rather than as health professionals, leading to regulatory issues. A common observation is that there is limited data on which to evaluate models of primary eye care across Europe.[3] However, the focus of these reviews[1,3,4] is the inter-relationship, roles, training, and regulation of the professions, rather than on whether they effectively deliver public health outcomes.

This paper critiques primary eye care models within the United Kingdom from a public health perspective.

## **General Ophthalmic Services (GOS) Contract**

In England, the General Ophthalmic Services Contract (April 2013)[5] (hitherto referred to as the GOS Contract) is the Contract for NHS funded sight tests between the National Health Service Commissioning Board (known as NHS England) and Contractors for general ophthalmic services. There are two types of GOS contract: Mandatory services contract for fixed premises and Additional contract for mobile services. A Contractor does not need to be a health professional and may own multiple practices. However, service providers (Performers) are optometrists or a few ophthalmic medical practitioners.

The GOS Contract specifies that the Contractor must test “the patient’s sight to determine whether he needs to wear or use an optical appliance” and also fulfil duties imposed under the *Opticians Act 1989*. [6] The most pertinent additional duty specified in the Act is “to perform such examinations of the eye for the purpose of detecting injury, disease or abnormality in the eye or elsewhere” and refer to hospital eye services, if appropriate.

In England [7], Wales[8] and Northern Ireland[9] , people are eligible for GOS sight tests if aged under 16; aged 16-18 and in full-time education; aged 60 or over; registered blind or partially sighted; diagnosed with diabetes or glaucoma; aged 40 or over with a first degree relative with glaucoma; or receives a specified means tested social benefit. Since April 2006, all residents of Scotland are entitled to an NHS funded eye examination.[10]

In England, the frequency at which people are eligible for a GOS sight test is laid out in a Memorandum of Understanding between the Department of Health, the Association of Optometrists and the Federation of Ophthalmic and Dispensing Opticians.[11] The minimum interval between sight tests for adults between 16 and 70 years should normally be two years, people below or over this age range or those at higher risk of visual impairment may have more frequent examinations. There is a tendency towards shorter re-test intervals where clinical interpretation is required.[12]

The Eye Health Examination Wales (EHEW) scheme[13] additionally offers extended free eye examinations to groups of the population that are at greater risk of certain eye diseases (e.g. from Black or South Asian ethnic group or who have a family history of eye disease) and to those that may find losing their sight particularly disabling (e.g. who are already blind in one eye or who are profoundly deaf).

As of 1<sup>st</sup> April 2013, the fee payable to contractors for a sight test conducted under a GOS contract is £20.90.[14] The NHS fee paid in Scotland[10] is higher than that paid in the other countries within the UK: £37 for adults under 60, £45 for adults over 60, and a supplementary eye examination fee of £21.50. The GOS higher sight test fee was associated with a more detailed eye examination, a requirement for practices to be equipped to a higher minimum standard and that clinicians delivering the tests had to undergo re-assessment of key clinical

competencies. The new arrangements in Scotland were also associated with better collaboration and communication between primary and secondary eye care, and more effective and accurate referrals utilising the supplementary examination fee.[15]

The General Ophthalmic Additional Services Contract permits mobile services to be provided to eligible people either at their place of residence or when attending a day centre who might otherwise have difficulty in obtaining sight testing services either because they cannot leave their home unaccompanied due to physical or mental illness or disability; or because of difficulties in communicating their health needs.

In the case of sight tests performed at a day centre, the Contractor receives the same fee as for a GOS test performed as part of Mandatory Services. For sight tests performed at a residential centre or patient's home, there is an additional fee paid on top of the standard fee. As of April 2013,[16] this was £36.82 for the first and second test conducted during a visit and £9.22 for a subsequent sight tests performed.

## **Uptake of GOS Sight Tests**

In England, there were 12,339,253 million sight tests performed in England under a GOS Mandatory Services Contract and 407,000 under an Additional Services Contract in 2012/13.[17]

In England in 2012, there were 10.1 million people aged 0-15 years, 5.8 million people aged 60-69, 6.3 million people aged 70 or over.[18] If everyone in these age groups had a sight test at the minimum frequency,[11] there would be 10.1 million sight tests in the '0-15' and 9.2 million in the '60 and over' age categories. In 2012/13, 2.4 million Mandatory Services GOS sight tests were performed for 0-15 year olds (uptake of 23%) and 5.5 million (uptake 60%) among people aged 60 or over.[17] Some in these age groups may also be eligible under another criterion or were eligible for additional services. No routine data on privately funded eye examinations have been published since 2005/6.[19] Nevertheless, many people who are entitled to a GOS sight test are not accessing this service.[20]

In Wales, 767,996 Mandatory and 24,139 Additional Contract sight tests were performed in Wales in 2012/13 [13] among a population of 3.074 million people.[18] 57,993 examinations were performed under the EHEW scheme.[13].

In Northern Ireland, 437,700 Mandatory and 15,058 Additional Contract sight tests were performed in 2012/13 [21] among a population of 1.824 million people.[18]

The number of primary and secondary eye examinations conducted in Scotland in 2012/13 were 1,584,996 and 331,620 respectively,[22] in a population of 5.314 million.[18] There has been an increase since the expansion of GOS eligibility to all Scottish residents in 2006/7, when the equivalent data were 1,480,187 and 64,515 respectively, although there was a small decrease between 2011/12 and 2012/13.[22]

The number of tests performed in 2012/13 per thousand population in Scotland was 300, compared to 250 in Wales, 231 in England and 229 in Northern Ireland. This is in comparison to a relatively low uptake of sight tests in Scotland compared to the other UK countries prior to 2006.[23] However, it is the rate among higher risk groups that will be important in terms of public health outcomes.

Reasons quoted[24-31] as barriers for uptake of eye examination include: cost of spectacles; mistrust of optometrists; fear of appearing frail; being confused during the examination; acceptance of poor vision as part of aging; lack of information about eye health; belief that sight tests are only needed if symptomatic with vision problems; poor geographical access to optometry services in deprived communities. Paradoxically, eye sight is seen as important

and the sense that people fear losing most. However, people realise that whilst the sight test may be free, any recommended optical appliances may not, as eligibility for a NHS Optical Voucher[32] towards purchasing optical appliances is more restrictive than that for sight tests.[7] In particular, over 60 year olds are not entitled to a Voucher unless they receive Pension Credit Guarantee Credit. Thus if people are concerned about the cost of optical appliances (and they are not eligible or do not realise that they are eligible for a Voucher), then they may not access a sight test.

### **Implications of 'below cost' GOS fee**

In 2006, Bosanquet[33] suggested that the true cost of providing an eye examination in the UK was £37 (compared with the GOS sight test fee at that time of £18.39). This is compatible with the GOS sight test fee paid in Scotland. The Optical Confederation estimated that the GOS fee elsewhere in the UK was less than half the actual cost of providing an eye examination,[34] although it was similar to the average private sight test fee.

The GOS sight test is therefore seen as a loss leader for attracting customers, to whom Contractors may be able to sell optical appliances. The sale of these optical appliances is crucial to make up for this subsidy of both NHS and privately funded sight tests.

This may have important consequences for inequalities in geographical access to sight tests, as there may be limited incentives for establishing an optometric practice within socio-economically deprived communities where the average sale of optical appliance is likely to be at or just above the value of a NHS Optical Voucher. This can lead to a mismatch between the most deprived areas and the location of optician premises.[35]

Geographical proximity to an optometrist is a strong predictor of uptake of GOS sight tests. In Tower Hamlets in London, 13% of people living within 0.1 kilometre of a sight test provider had a sight test in any one year.[36] This level is maintained up to 0.3km but declines thereafter to 4% among people living 1km away from an optometrist. Attenuation was particularly steep after 0.8 kilometres, hence, it was suggested that there should be an optometrist within a 15 minute walk of every resident.

In order to address this inequality of access, it might be necessary to offer a higher GOS fee for optometrists willing to establish practices in deprived areas or consider alternative ways of subsidising their services.

There is no indicative length of appointment specified in the GOS Contract in England. Thirty minutes is the time specified for a full eye examination in the Scottish General Ophthalmic Services Regulations[10] albeit this attracts a higher fee than in England. The shortfall in sight test income means that Contractors may be tempted to fit as many appointments into the day as

possible. Older patients, in particular, feel rushed, worried about making mistakes and being issued with an inaccurate prescription for spectacles.[24]

In many practices, tonometry and visual field measurements are performed by optical assistants. It is arguably a better use of optometrists' time if such procedures are performed by lower paid staff, with suitable equipment.

However, this may mean that patients do not appreciate the importance of these elements of the eye examination.

The need to cross-subsidise sight tests, may tempt Contractors to maximise the conversion rate of appointments into sales. In a guide to building a successful practice, it was suggested that most established practices will achieve 50%-80% conversion rates[37] and sales per examination of £90-£160. This could add to patient concerns of being pressurised into buying a product that they perceive that they don't need or is more expensive than their budget.[24]

### **Is the approach in Scotland better?**

A review of the policy change in Scotland, noted that "significant cost savings, through people avoiding loss of vision and benefiting from the early treatment of disease, will only emerge over the longer term as a much larger section of Scottish society has their eyes tested on a regular basis".[38] However, while a higher percentage of the Scottish population may have had their eyes tested, the policy has not significantly increased uptake among higher risk individuals

who were not previously access examinations[23] as barriers due to cost of optical appliances remain.

It would be a pity if the additional investment in GOS in Scotland does not achieve the desired improvement in population eye health. The new General Ophthalmic Services Contract in Scotland should be judged according to whether:

- the higher GOS fee means that there is less imperative to sell optical appliances to make up the shortfall from sight test fees and hence improves trust between optometrists/opticians and the general public?
- geographical access to optometry services improves if it becomes financially viable for practices to establish in socio-economically deprived communities?

### **The need for more flexible interpretation of the GOS contract**

The Mandatory GOS Contract requires that an address is specified at which Services are to be provided, implying a single, fixed address. However, tribunal[39] that overturned a rejected application for providing GOS services from a specially equipped minibus accepted that ““premises” were more than merely fixed buildings and structures” and that “it is for the PCT to determine whether ... the premises, equipment and record keeping arrangements to provide the services under the contract”. Thus, there may be scope for more flexible interpretations than hitherto of definitions within the GOS Contract in

order to bring primary eye care to communities with limited local access and for people who may feel intimidated from going to traditional eye testing settings.

### **More radical renegotiation of the GOS Contract**

While the NHS in Scotland was convinced of the longer term value of changes to the GOS fee structure, given the relative short term value of sight tests subsidised by optical appliance sales, there are disincentives in making radical changes elsewhere in the UK. Instead, additional activity has been negotiated outside of the GOS contract via local enhanced services, for example, for glaucoma referral refinement following the increase in referrals subsequent to the NICE guidelines on the diagnosis and management of chronic open angle glaucoma and ocular hypertension.[40] Other community optometry services include:[41] ocular hypertension monitoring, pre/post-operative cataract assessment, acute eye problems and low vision services. As services are negotiated locally, each area has variation in patient eligibility, training requirements, and fee structures. National schemes would be more convenient for optometrists, but could also be underpinned by evidence with a common dataset for quality assurance, whether or not these are encapsulated within any future renegotiated GOS Contract.

The supplementary eye examination fee in Scotland is intended to cover follow-up examinations such as raised intraocular pressure detected during the routine

eye examination, and hence is included within the main GOS Contract without the need for further development of a community service.

Activity could be shifted from typically overstretched hospital eye services into optometric primary care, as has happened with medical general practice over recent decades. There may be coherent cost and quality arguments for such a shift[42,43] with fees below the hospital tariff for such activity. Although it should be noted that shifts in activity from other secondary care specialities have rarely been associated with shifts of budget to cover the change in responsibility.

Widening the range of optometric services may change public perceptions of optometrists as 'glasses salespersons'. Indeed many of the optometrists who have embraced local enhanced services have done so because of the credibility that this gives them as eye health professionals. At present, people may not use the same optometrist on each occasion leading to no continuity of care or ability to monitor change. One advantage of a more explicit focus of optometry as providers of primary eye care is to improve continuity of care, possibly with practice registers similar to general practice.

While in the UK, optometrists and dispensing opticians work alongside one another, and optometrists are permitted to dispense as well as prescribe, there are international precedents for a greater separation between the roles.[1,3,4] A radical review of the optical sector may lead to separation of providers of eye examinations and dispensing. Optometrists responsible for eye examinations

could be located alongside GPs or at least location could be driven by need rather than commercial factors. The focus would no longer be need for optical appliances, but eye health more generally. There are public health implications and NHS costs associated with refractive error e.g. impact on wellbeing, increased risk of falls etc..[44] Patients would therefore still need to be issued with a prescription for correction of refractive error, if appropriate, however, this should be perceived to be more impartial advice on need, with no direct connection to sale of optical appliances.

## **Conclusions**

The preventable sight loss indicator within the Public Health Outcomes Framework for England[45], the eye health strategy documents in Wales [46] and Northern Ireland.[47], the 2006 GOS Contract in Scotland are a recognition of the importance of eye health. The GOS budget will need to increase, if only to allow for an aging population. Any substantial additional increase would need to be justified by benefits to the public health with health and social care cost savings. However, it is important that the current GOS contract and its interpretation do not restrict innovation to address inequalities and interventions to increase early detection of preventable sight loss.

The purpose of this paper is not to advocate any particular model for delivery of eye care that should be adopted by every country, but rather to encourage a

review of the model currently in place against public health principles which we propose to be as follows.

1. Getting the right patient, in the right place, at the right time to facilitate appropriate access, especially by higher risk individuals, for early detection/ treatment of preventable sight loss. This requires addressing barriers arising from unintended consequences of the GOS contract.
2. Utilising the right staff, with the right skills/equipment, at the right point in the pathway. The United Kingdom has a well-trained eye health workforce. Significant changes to the GOS contract and shifts of activity may be destabilising, but there are benefits from matching services more appropriately to workforce expertise.
3. Generating the right data, of the right quality, utilised by the right person to facilitate timely and effective communication across the eye care pathway but also to provide data to evaluate success at achieving public health targets.

## References

1. Thomas D, Weegen L, Walendzik, Wasem J, Jahn R. Comparative Analysis of delivery of Primary eye Care in Three European Countries. Essen: IBES, Universität Duisberg-Essen, 2011. Available at; <http://www.ecoo.info/projects-and-eu-affairs/studies-and-reports/> [accessed 29.7.14].
2. Resnikoff S, Felch W, Gauthier T-M, Spivey B. the number of ophthalmologists in practice and training worldwide; a growing gap despite more than 200 000 practitioners. Br J Ophthalmol 2012doi:10.1136
3. Health Consumer Powerhouse. 2013 Euro Vision Scorecard. Danderyd: Health Consumer powerhouse, 2013. Available at: <http://www.healthpowerhouse.com/files/2013-EVS/2013-Euro-Vision-Scorecard-Report-131009.pdf> [accessed 29.7.14].
4. European Council of Optometry and Optics. ECOO Blue Book. Available at: [http://www.ecoo.info/wp-content/uploads/2012/07/ECOO\\_BlueBook2008.pdf](http://www.ecoo.info/wp-content/uploads/2012/07/ECOO_BlueBook2008.pdf) [accessed 29.7.14].
5. General Ophthalmic Mandatory Services Model Contract. Available at: [http://www.aop.org.uk/uploads/regulatory/england/gos\\_model\\_contract\\_mandatory\\_services\\_april\\_2013.pdf](http://www.aop.org.uk/uploads/regulatory/england/gos_model_contract_mandatory_services_april_2013.pdf) [accessed 29.7.14].
6. The Opticians Act 1989. Available at: [https://www.optical.org/en/about\\_us/legislation/opticians\\_act.cfm](https://www.optical.org/en/about_us/legislation/opticians_act.cfm) [accessed 29.7.14].
7. NHS Choices. Help with Health costs: Eyecare entitlements. Available at: <http://www.nhs.uk/nhsengland/healthcosts/pages/eyecarecosts.aspx> [accessed 29.7.14].

8. NHS Direct Wales. Local Services: Opticians – Frequently Asked Questions. Available at: <http://www.nhsdirect.wales.nhs.uk/localservices/opticianfaq/> [accessed 29.7.14].
9. nidirect government services. Free sight tests for over-60s and help with other health costs. Available at: <http://www.nidirect.gov.uk/free-sight-tests-for-over-60s-and-help-with-other-health-costs> [accessed 29.7.14].
10. Primary and Community Care Directorate, The Scottish Government. *General Ophthalmic Services. NHS: PCA(O)(2010)1*. 12 March 2010. Available at: [http://www.sehd.scot.nhs.uk/pca/PCA2010\(O\)01.pdf](http://www.sehd.scot.nhs.uk/pca/PCA2010(O)01.pdf) [accessed 29.7.14].
11. Memorandum of Understanding between Department of Health and Association of Optometrists and Federation of Ophthalmic and Dispensing Opticians on frequency of GOS sight tests. Available at: [www.fodo.com/downloads/resources/Memorandum%20of%20Understanding,%20frequency%20of%20sight%20tests.pdf](http://www.fodo.com/downloads/resources/Memorandum%20of%20Understanding,%20frequency%20of%20sight%20tests.pdf) [accessed 29.7.14].
12. Warburton T. A survey of specified recall intervals for eye examinations. *Optometry Today*, 2000; August 18: 30-31.
13. Statistics for Wales. Eye care Statistics for Wales . 2012-13. June 2013. Available from <http://wales.gov.uk/docs/statistics/2013/130605-eye-care-statistics-2012-13-en.pdf> [accessed 29.7.14].
14. National Health Service, England. The General Ophthalmic services Contracts (Payments) Directions 2013. Available at: <http://www.england.nhs.uk/wp-content/uploads/2013/04/gos-pay-dir.pdf> [accessed 29.7.14].

15. General Ophthalmic Services (Scotland): Effective and equitable community eye care services: An example of Scottish innovation and excellence. Available at: <http://www.scotland.gov.uk/Resource/Doc/919/0102212.pdf> [accessed 29.7.14].
16. National Health Service, England. The General Ophthalmic Services Contracts (Payments). Directions 2013. Available at: <http://www.england.nhs.uk/wp-content/uploads/2013/04/gos-pay-dir.pdf> [accessed 29.7.14].
17. Health and Social Care Information Centre. General Ophthalmic services: Activity Statistics for England, year ending 31 March 2013. Available at: <http://www.hscic.gov.uk/catalogue/PUB11233/gos-eng-12-13-anx-A.xlsx> [accessed 29.7.14].
18. Office for National Statistics. Interactive Download Table Tool – National population Projections 2012-based. Available at: <http://www.ons.gov.uk/ons/interactive/2012-npp/index.html> [accessed 29.7.14].
19. The NHS Information Centre. *Sight Tests Volume and Workforce Survey 2005/6*. Available at: <http://www.hscic.gov.uk/catalogue/PUB01173/sigh-test-volu-work-serv-05-06-rep.pdf> [accessed 29.7.14].
20. Shickle D, Farragher T. Geographical inequalities in uptake of NHS funded eye examinations: small area analysis of Leeds, UK. *Journal of Public Health* (in press).
21. HSC Business Services Organisation. Annual Health Service Ophthalmic Statistics in Northern Ireland (2012/13). Available at:

[http://www.hscbusiness.hscni.net/pdf/General\\_Ophthalmic\\_Service\\_Statistics\\_in\\_Northern\\_Ireland\\_%282012-13%29.pdf](http://www.hscbusiness.hscni.net/pdf/General_Ophthalmic_Service_Statistics_in_Northern_Ireland_%282012-13%29.pdf) [accessed 29.7.14].

22. Information Services Division NHS National Services Scotland. General Ophthalmic Services Statistics. Glasgow: ISD Scotland, 2013. Available at: <https://isdscotland.scot.nhs.uk/Health-Topics/Eye-Care/Publications/2013-08-27/2013-08-27-Ophthalmic-Report.pdf?28849428893> [accessed 29.7.14].

23. Dickey H, Ikenwilo D, Norwood P, Watson V, Zangelidis A. Utilisation of eye-care services: The effect of Scotland's free eye examination policy. *Health Policy* 2012; 108: 286-93.

24. Shickle D, Griffin M. Why don't older adults in England go to have their eyes examined? *Ophth Physiol Optics* 2014; 34: 38-45.

25. Shickle D, Griffin M, Evans R et al. Why don't younger adults in England go to have their eyes examined? *Ophth Physiol Optics* 2014; 34: 30-37.

26. Leamon S, Hayden C, Lee H, Trudinger D, Appelbee E, Hurrell D-L, Richardson I. et al. Improving access to optometry services for people at risk of preventing sight loss: a qualitative study in five UK locations. *Journal of Public Health* 2014 doi:10.1093/pubmed/fdt130.

27. McLaughlan B & Edwards A. Understanding of the Purpose of an Eye Test Among People Aged 60 and Over in the UK. *Optometry in Practice* 2010; 11(4): 179-188.

28. Cross V, Shah P, Bativaala R, Spurgeon P. ReGAE 2: primary eye care service utilisation and glaucoma: some viewpoints from African-Caribbeans in Birmingham UK. *Eye* 2007; 21: 912-20.

29. Patel D, Baker H, Murdoch I. Barriers to uptake of eye care services by the Indian population living in Ealing, West London. *Health Education Journal* 2006; 65(3): 267-76.
30. Alexander RL, Miller NA, Cotch MF & Janiszewski R. Factors that influence the receipt of eye care. *Am J Health Behav* 2008; 32: 547–556.
31. McLaughlan B & Edwards A. Understanding of the purpose of an eye test among people aged 60 and over in the UK. *Optom Pract* 2010; 11: 179–188.
32. National Health Service, England. The National Health Service (Optical Charges and Payments) Regulations 2013. Available at: [http://www.aop.org.uk/uploads/regulatory/england/optical\\_charges\\_and\\_payments\\_regulations\\_2013.pdf](http://www.aop.org.uk/uploads/regulatory/england/optical_charges_and_payments_regulations_2013.pdf) [accessed 29.7.14].
33. Bosanquet N. *Developing a New Partnership Contract for Community Eye Care in England*. London: Imperial College London, 2006.
34. Optical Confederation. *Optics at a Glance 2011*. London: Optical Confederation, 2011. Available at: [http://www.aop.org.uk/uploads/media\\_centre/optics-at-a-glance\\_dec2011.pdf](http://www.aop.org.uk/uploads/media_centre/optics-at-a-glance_dec2011.pdf) [accessed 29.7.14].
35. Day, F., Buchan, J.C., Cassells-Brown, A., Fear, J., Dixon, R., Wood, F. A glaucoma equity profile: correlating disease distribution with service provision and uptake in a population in Northern England, UK. *Eye* 2010; **24**: 1478-1485.
36. Public Health Action Support Team. *Care Needs Assessment: Eye Health – Findings and Recommendations*. Gerrards Cross: PHAST, 2009. Available from: <http://www.towerhamlets.gov.uk/idoc.ashx?docid=4d3f1b30-f18a-4c82-a4f3-dc3e8c2c8fff&version=-1> [accessed 29.7.14].

37. Association of Optometrists. *A guide to building a successful practice*: Ten Alps Creative 2010.
38. 4-consulting on behalf of Association of Optometrists. The economic impact of free eye examinations in Scotland. Kirkcaldy: 4 Consulting , 2012. Available at: [http://www.aop.org.uk/uploads/Scotland/the\\_economic\\_impact\\_of\\_free\\_eye\\_examinations\\_in\\_scotland.pdf](http://www.aop.org.uk/uploads/Scotland/the_economic_impact_of_free_eye_examinations_in_scotland.pdf) [accessed 29.7.14].
39. In the First Tier Tribunal of the Tribunals Service; Health, Education and Social Care Chamber; Primary Health Lists. Case PHL/15323. Jane Louise Fisher (appellant) and Dorset Primary Care Trust (respondent). Decision with reasons. Available at: <http://www.primaryhealthnet.com/images/logos/link.pdf> [accessed 29.7.14].
40. National Institute for Health and Care Excellence. Glaucoma: diagnosis and management of chronic open angle glaucoma and ocular hypertension. CG85. Available from; <http://www.nice.org.uk/CG85> [accessed 29.7.14].
41. LOC Support Unit. Enhanced Services Pathways. Available from: <http://www.locsu.co.uk/enhanced-services-pathways/> [accessed 29.7.14].
42. Riad SF, Dart JKG, Cooling RJ. Primary care and ophthalmology in the United Kingdom. *Br J Ophthalmol* 2003; 87: 493-499.
43. National Eye Care Services Steering Group. *First Report*. Available at: [http://www.dh.gov.uk/prod\\_consum\\_dh/groups/dh\\_digitalassets/@dh/@en/documents/digitalasset/dh\\_4080999.pdf](http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_4080999.pdf) [accessed 29.7.14].
44. Scuffham, PA, Legood R, Wilson ECF, Kennedy-Martin T. The incidence and cost of injurious falls associated with visual impairment in the UK. *Vis Impair Res* 2002; 4(1): 1–14.

45. Department of Health. Improving outcomes and supporting transparency. Part 2: Summary technical specifications of public health indicators, Updated November 2013. Available at:  
[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/263662/2901502\\_PHOF\\_Improving\\_Outcomes\\_PT2\\_v1\\_1.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/263662/2901502_PHOF_Improving_Outcomes_PT2_v1_1.pdf) [accessed 29.7.14].
46. GIG Cymru NHS Wales. Together for Health: Eye Health Care. Delivery Plan for wales , 2013-2018. Cardiff: Welsh Government, 2013. Available at:  
<http://www.wales.nhs.uk/documents/Eye-Health-Care-Delivery-Plan-Wales-e.pdf> [accessed 29.7.14].
47. Department of Health, Social services and Public Safety. Developing eyecare partnerships: Improving the Commissioning and Provision of eyecare services in Northern Ireland. Belfast: DHSSPS, 2012. Available at:  
<http://www.dhsspsni.gov.uk/eyecarestrategy2012.pdf> [accessed 29.7.14].