UK National Screening Committee

Vision Screening in Children aged 4-5 years - an evidence review

Consultation comments pro-forma

Organisation:	College of Optometrists (jointly with the Optical Confederation, Optometry Northern Ireland, Optometry Scotland,Optometry Wales and LOCSU		
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Section and / or page number	**Text or issue to which comments relate**	**Comment** *Please use a new row for each comment and add extra rows as required.*
General	General	This is a joint response from all the organisations representing optometry and optics in the UK. The College of Optometrists is the professional, scientific and examining body for optometry in the UK. The Optical Confederation acts for UK optical professionals, manufacturers, retailers, distributors and importers. It brings together: the Association of British Dispensing Opticians, the Association of Contact Lens Manufacturers, Association of Optometrists, Federation of Manufacturing Opticians, and the Federation of (Ophthalmic and Dispensing) Opticians.

		Optometry Northern Ireland represents all community optometrists, opticians and dispensing opticians across Northern Ireland. Optometry Scotland represents the views of the entire optometry sector of Optometrists, Dispensing Opticians and Optical Bodies Corporate to the Scottish Parliament, the Scottish Government Health Directorates and other relevant stakeholders. Optometry Wales represent all community optometrists, opticians and dispensing opticians across Wales. LOCSU provides quality, practical support to Local and Regional Optical Committees (LOCs/ROCs) in England and Wales to help them to develop, negotiate and implement local objectives in respect of primary ophthalmic services. It is a key interface between the optical, representative bodies and the LOCs/ROCs, facilitating robust lines of communication between the national organisations and the grass roots of the professions.
General	General	In summary, our response makes two points: 1. The evidence review is not fit for purpose because it is incomplete. The NSC defines visual defects as including "amblyopia, refractive error and strabismus"[1] but the review only focuses on amblyopia.

[1] Quote taken from http://www.screening.nhs.uk/vision-child, accessed on 30/7/13.

		2. Given the evidence that is included in the review, we suggest the NSC consider a change to their policy on children's screening. We recommend that the policy be amended so that screening be "undertaken and led by competent professionals" rather than being solely "orthoptic-led". Our response then flags up a technical error made in the review about how visual acuity is measured.
Introduction, page 3 Appraisal against NSC criteria, page 6	"Screening for reduced vision in children aged 4 – 5 years is primarily undertaken, as part of the NHS Healthy Child Programme, to detect individuals with amblyopia". "Disorders other than amblyopia have not been considered specifically in this review for the following reasons: - significant bilateral visual impairment in otherwise healthy children would be expected to be detected before age 4 – 5 years due to the absence of normal visual behaviour / visual responsiveness/visual attention -many disorders causing significant vision impairment are associated with co-morbidity such that affected children would be under the care of health professionals by age 4 – 5 years(3;4) In addition, disorders associated with amblyopia,	It is not clear what the evidence review set out to evaluate. The opening line of the introduction to the expert review implies it will evaluate the evidence for "screening for reduced vision" (page three). The NSC policy on its website mentions screening for "poor vision", "visual impairment" and "vision defects". Only the term vision defects is properly defined: "vision defects include amblyopia, refractive error and strabismus"[2]. If the NSC's objective with the review was to systematically evaluate the evidence for "screening for reduced vision" where "vision defects include amblyopia, refractive error and strabismus"[3] then it is incomplete. The decision to exclude causes of reduced vision other than amblyopia results from two assumptions (page 6, left) that dictate the structure of the review, the evidence included and how that evidence is evaluated. Firstly, the review assumes that refractive error alone cannot be considered a visual

[2] All quotes in this paragraph are taken from UK NSC policy on Vision defects screening in children, http://www.screening.nhs.uk/vision-child, accessed on 30/7/13.
[3] Both quotes taken from http://www.screening.nhs.uk/vision-child, accessed on 30/7/13.

	such as strabismus or refractive error, which are of sufficient severity as to negatively impact on visual development and require intervention, would be identified through the detection of the resultant amblyopia. Thus, the detection of childhood refractive error or strabismus in the absence of amblyopia has not been considered".	impairment or sufficiently severe a cause of reduced vision to merit intervention unless it is associated with amblyopia. Secondly, it makes the assumption that children are unlikely to have undetected reduced vision from causes other than amblyopia at age 4-5 because parents, carers or clinicians would notice a bilateral visual impairment through the child's behaviour and seek treatment. We question both those assumptions. Assuming that refractive error cannot be considered a source of reduced vision unless it is associated with amblyopia is at odds with internationally accepted definitions of visual impairment. The World Health Organisation amended its definition of visual impairment from a classification based upon "best corrected visual acuity" (typically meaning how clearly one can see wearing corrective lenses) to one using "presenting visual acuity"(how well someone can see given how they currently live, be that with or without corrective lenses). The WHO case for changing the definition noted that: "*Many recent studies have shown that the use of "best corrected" vision overlooks a large proportion of persons with visual impairment, including blindness, due to uncorrected refractive error, a common occurrence in many parts of the world. Uncorrected refractive error is now considered to be a major cause of visual impairment and estimations are under way to calculate the loss in terms of DALYs (disability-adjusted life years) resulting from this cause. The correction of refractive error is a cost effective intervention and is one of the priorities under the disease control component of the Global Initiative for the*

		Elimination of Avoidable Blindness (VISION 2020, the Right to Sight)"[4]. The International Statistical Classification of Diseases and Related Health Problems 10th Revision (ICD-10) Version for 2010 also classifies visual impairment using "presenting visual acuity". Under these definitions, refractive error can be a cause of visual impairment if it is not diagnosed and corrected. Furthermore, the 2005 study by Robaei et al found that uncorrected refractive error (in particular astigmatism) was the biggest cause of reduced vision within a large population-based sample of children with amblyopia the next most common cause[5]. That a significant proportion of children who fail screening are likely to need corrective lenses due to refractive error is demonstrated by other studies[6,7]. This assumption that refractive error is not a significant cause of reduced vision unless associated with amblyopia would be less material if the second assumption "that significant bilateral visual impairment in otherwise healthy children would be expected to be detected before age 4 – 5 years due to the

[4] http://www.who.int/blindness/Change%20the%20Definition%20of%20Blindness.pdf
[5] Robaei,D et al (2005) Visual Acuity and the Causes of Visual Loss in a Population-Based Sample of 6-Year-Old Australian Children, Ophthalmology, Volume 112, Issue 7, July 2005, Pages 1275-1282, http://dx.doi.org/10.1016/j.ophtha.2005.01.052
[6] Donaldson, L. A. , Karas, M. P. , Charles, A. E. and Adams, G. G. W. (2002), Paediatric community vision screening with combined optometric and orthoptic care: a 64-month review. Ophthalmic and Physiological Optics, 22: 26–31. doi: 10.1046/j.1475-1313.2002.00001.x
[7] Newman, D.K et al (1996) Preschool vision screening: outcome of children referred to the hospital eye service. British Journal of Ophthalmology, 80, 1077-1082.

		absence of normal visual behaviour/visual responsiveness/visual attention" held true. However, it is our clinical experience that this is not the case and a significant number of children treated in paediatric eye health services present after age 4-5 with uncorrected refractive errors and significant bilateral impairments. Neither do we agree with the decision to exclude refractive error from the review based upon the assumption that only refractive error severe enough to manifest as amblyopia will "negatively impact on visual development and require intervention". This assumption is not adequately explained by the review of the evidence cited. On the contrary, the NSC website section *More about vision defects* states that "poor vision can impair learning and it is important that every child's vision is checked when they are between 4 and 5 years old"[8]. Therefore the NSC seems to acknowledge that vision defects (which includes amblyopia but also strabismus and refractive error without amblyopia) can have a negative impact on educational and developmental outcomes. If these assumptions are flawed, then it follows that the case for screening for reduced vision has not been properly evaluated. Evidence relating to refractive error which is severe but is not associated with amblyopia has not been considered. Therefore the review is incomplete, not fit for purpose and may understate the case for screening.
Introduction, page 3	The current NSC policy, last reviewed in 2005, is that all children should be screened for reduced vision	It is our view that the evidence presented in the review is not strong enough to support the policy that screening should be

[8] Quote taken from http://www.screening.nhs.uk/vision-child, accessed on 30/7/13.

	between 4 and 5 years of age, with testing undertaken by orthoptists (specialists in the assessment of vision in childhood) or by other professionals in an orthoptic-led service (i.e. trained and supported by orthoptists).	'orthoptic-led'. A policy based upon competencies rather than professional boundaries would be supported by the evidence, reflect developments in the general NHS and public health workforce and potentially improve programme delivery without presenting any clear risk to the quality or efficiency of screening. Profession-based service descriptors are inflexible and out of step with developments across the healthcare where competence-based service definitions are now the norm. We believe a competency-based policy would be easier to implement across the UK without any negative impact on outcomes. We recommend changing the policy to "all children should be screened for reduced vision between 4 and 5 years of age, with testing undertaken and led by competent professionals".
Introduction, page 4	The gold standard scale for acuity in ophthalmic practice is now the LogMAR (Logarithmic Minimum Angle of Resolution) system, in which each 'line' of optotypes (symbols on vision chart comprising letters or pictures) corresponds to a unit of 0.1 and represents a 10 fold difference in acuity compared to the adjacent line;	This is a technical misunderstanding of how visual acuity is measured. Each line does not represent "a 10 fold difference in acuity compared to the adjacent line". The progression between the lines is based on a logarithmic scale and the magnitude of the difference in the visual angle subtended at the eye of letters presented on adjacent lines is considerably less than 10.

Please return to Valmae Young, Senior Administrator (on behalf of John Marshall, Projects and Programmes Manager): screening.evidence@nhs.net **by 29th August 2013.**