Framework for provision of eye care in special schools in England

1. Introduction

This paper produced by SeeAbility, the Association of British Dispensing Opticians, the British and Irish Orthoptic Society, the College of Optometrists, the Local Optical Committee Support Unit (LOCSU) and the Royal College of Ophthalmologists, supported with advice from the Children's Vision Service Advisory Group in Wales, provides a framework whereby all children and young people in special schools in England gain equitable access to regular eye care.

A list of contributors to the paper is included in **Appendix F.**

The Clinical Council for Eye Health Commissioning has given its endorsement for a comprehensive and targeted programme of eye care for children and young people in special schools in England.

For matters of equality this paper strongly recommends a nationally funded programme to achieve universal coverage across England.

2. The prevalence of sight problems amongst children with disabilities

It is well documented that children with neurodevelopmental impairments are at greatly increased risk of significant visual problems when compared to the general population. There are high levels of refractive error and strabismus which are both treatable conditions providing they are identified. In some cases more serious pathology and ocular abnormalities, such as cataract will be found. Other visual

problems resulting from brain pathology rather than ocular abnormality, including reduced visual acuity, visual field defects, oculomotor abnormalities, impairments of visual attention and perceptual difficulties are also likely to present in this group of children.

Further information is shown in **Appendix A.**

3. The case for operating an eye health care service in special schools in England

There is strong evidence that children and young people with learning disabilities have problems accessing community eye care services. Often there is a risk of diagnostic overshadowing, that is, that difficulties arising from behaviours caused by a visual problem are mis-attributed to a learning disability. In addition because of the many other challenges this group of children and young people face, visual difficulties may be overlooked. SeeAbility's work indicates around 4 in 10 of children who attend the special schools it works in have no previous eye care history. An earlier study of children attending five special schools in Wales found a history of previous eye care was reported for only 62% of children for whom historical eye care information was available. Further information and other studies are also referenced in **Appendix A.**

The evidence from existing exemplar services operating in special schools (e.g. Warrington), and from pilot projects (SeeAbility) shows that providing eye care in the special school setting when it is appropriate to do so has a number of significant advantages over community or secondary care. As well as targeting the children and young people that need eye care the most, it addresses the inequalities and barriers to access that many experience.

Currently, it appears that the General Ophthalmic Services Contract ('GOS')[1] is a nationally funded programme that many children and young people are not accessing. The fee for a standard GOS sight test is £21.31. The General Ophthalmic Service's primary 'reasonable adjustment' for eligible persons who are unable to leave their home unaccompanied because of physical or mental illness or disability is a domiciliary fee of £37.56 on top of the standard £21.31 fee in respect of each of the first and second sight tests provided. This equates to £58.87 for a sight test a child or young person may receive at home.

However, SeeAbility has been unable to establish if any children benefit from domiciliary sight testing. The figures are not collected centrally[2] and SeeAbility has not come across any child that has accessed eye care at home during its work in special schools.

[1] General Ophthalmic Services Contracts (Payments) Directions 2015 www.gov.uk/government/uploads/system/uploads/attachment_data/file/453367/Ophthalmic_payments_directions_2015_acc.pdf

[2] See Hansard 5 March 2015 www.parliament.uk/business/publications/written-questions-answers-statements/written-question/Commons/2015-02-26/225539

Changes in vision are a common occurrence during childhood and adolescence and will have a significant impact on a child's ability to interact and on their education. Developmentally normal children are more likely to report deteriorating vision and access eye care via the GOS and community optometry. Children who attend special schools are less likely to do so because of communication difficulties as well as other barriers discussed in **Appendix B.**

The alternative is bringing children into hospital eye clinics at potentially much greater cost. At time of writing, first attendance tariffs for paediatric ophthalmology are £149 then £100 for a single professional follow up attendance[3], while local tariffs may be agreed or exist for each hospital optometry or orthoptic clinic visit not counted under the national tariff costs. For children with learning disabilities, multiple attendances for different professionals and different checks are likely.

An in-school model supports the move towards preventative, early health care, which includes restorative treatment and preventing unnecessary sight loss. The model is also a more financially efficient way of working. Having a core team (which for the purposes of this paper we will call a 'Special Schools Ophthalmic Team'), that delivers as much eye care as possible in the school environment, throughout a child and young person's school life, can help achieve cost savings, particularly around ongoing ophthalmic care that can be managed at a lower cost in a school setting.

SeeAbility's first year of service has been costed at £85[4] per sight test. In Warrington, substantial cost savings have also been estimated from transferring the hospital model into two special schools (Greenwood).

Other benefits of operating this model are outlined in **Appendix B**.

4. Services currently operating in England

Good, appropriately funded, services exist in a small minority of areas and it is vital that these existing exemplar services in special schools are supported and not dismantled or eroded. However in the vast majority of areas no in-school services exist or provision is only limited to school entry.

There may in some areas be a vision-screening programme at school entry[5] but this paper does not recommend it as a tool for the special school population.

[3] National tariff payment system 2014/15. See www.gov.uk/government/publications/national-tariff-payment-system-2014-to-2015

[4] Indicative, there is more work that SeeAbility will be doing on its second year of costings

[5] The National Screening Committee recommends "Screening for visual impairment between 4 and 5 years of age should be offered by an orthoptic-led service. Although refractive error and strabismus would be detected by screening, amblyopia is the most likely condition to be detected in this age defined population." See http://legacy.screening.nhs.uk/vision-child

This is because this population of children are much less likely to be able to co-operate with National Screening Committee recommended tests and are also much more likely to have visual/ocular problems.

It is also important to note that SeeAbility has been awarded an 'additional services' GOS contract to operate in two NHS England areas (London and Thames Valley) to cover schools in the Children in Focus project, but this only pays a £21.31 sight test fee which is provided for in the directions for eligible persons attending day centres (vouchers to cover spectacle costs can also be claimed through this contract). SeeAbility is only able to operate with this payment because it is charitably funding the remainder of the costs – something that is not sustainable in the long term.

5. Principles for a framework

For reasons of equality, and in light of the significantly increased incidence of ocular and visual problems, it is important that what is made available to children and young people who attend special school is equal to what children and young people have a right to access under the General Ophthalmic Services contract (i.e. the right to a free NHS primary care sight test) and under clinical guidelines. Further details are outlined in **Appendix C.**

The framework is a reasonably adjusted, child-centred model that:

- Achieves equity of access irrespective of a child's disability and age
- Maximises uptake and overcomes issues of consent
- Avoids unnecessary travel, distress and time out of school
- Reduces anxiety and stress for parents/carers
- Minimises burden on hospital eye clinics, by reducing the need for onward referral and allows for safe discharge
- Ensures educational involvement
- Has effective feedback and communication systems
- Supports continuity of care from eye care professionals in the school
- Finds solutions to problems e.g. a process for children in transition

6. Recommended clinical protocols

A flowchart illustrating the pathway is shown in **Appendix D**

6.1 Consent

It is recommended that the service operates an **opt-out** policy and that schools at the start of each academic year distribute consent forms. This will maximise use of and access to the service.

The only proviso is where cycloplegia is used **opt-in** consent must be obtained from a parent or guardian with parental responsibility. A protocol will be developed to ensure there is a failsafe mechanism for the children for whom the team feel that examination under cycloplegic is indicated.

Parents should be notified that if they do not opt-out of the service, information on their child's eyes and vision and any associated recommendations will be put into their child's annual report and shared amongst professionals as necessary to support their child. Options for the dispensing of spectacles should form part of the consent. Where spectacles are needed, families should have the choice of allowing the Special Schools Ophthalmic Team and school staff to choose spectacles with the child, to attend themselves to choose spectacles or to take a spectacle prescription voucher to an optician to get spectacles fitted.

6.2 Equipment

An up to date and appropriate kit of tests and equipment for visual assessment, refraction, eye health and fundus checks, spectacle fitting and dispensing/repairs will be necessary for all services. It is recognised all up to date recommendations from the relevant professional bodies should be adhered to with respect to equipment/tests used.

A recommended equipment list is outlined in **Appendix E**.

6.3 Clinic history taking and information gathering

Before appointments with new starters at the school, efforts will be made to gain relevant information from parents, ideally in written format. This should include past ophthalmic history (hospital and optometric dates and outcomes of previous appointments), history of spectacle wear, notes on general health and medication, family history of eye problems, birth history and parental/teacher/support staff concerns and observations.

The following form produced by SeeAbility can be used to collate this information www.seeability.org/uploads/files/Children_in_Focus_campaign/About_your_childs_eyes.pdf.

6.4 Tests

At school entry (4-5 years old) or at any point where the child enters school for the first time, and **then at least annually*** the following tests should be attempted with all children:

- Habitual vision (visual acuity with glasses if worn or vision without glasses if

glasses are not habitually worn) / for distance and near, monocularly and, where indicated, binocularly. Or, where this is not possible, functional visual assessment using tests appropriate to the child.

- Assessment of binocular vision (ability to use both eyes together) using cover test/ prism fusion ranges/10 or 20 base out prism and measurement of stereopsis (depth perception).
- Assessment of ocular movements to include: fixation (ability to look directly at a target) and eye movement extent and control (ability to make appropriate, smooth and accurate eye movements in all directions and accurate saccadic eye movements between targets).
- Refraction by retinoscopy, under cycloplegia where indicated**.
- Accommodation (focusing for near tasks) by dynamic retinoscopy.
- Visual fields (extent of 'all-round' vision).
- Internal and external eye health examination by ophthalmoscopy using dilation where indicated (see references to cycloplegic examination).
- Intraocular pressures if clinically required.

* Colour vision and contrast sensitivity do not need to be an annual test. These should be undertaken at an appropriate point and when clinically indicated.

** The only proviso would be that for the **first refraction** it is advised this is under cycloplegia. Where this is not possible or practical the practitioner should record the reasons.

The framework allows for clinical judgment in terms of an increased frequency of examination if indicated (for example in cases of inconclusive findings, therapy for amblyopia, following provision of a first prescription) and for referral onwards (see 6.6). Wherever a test is attempted but is not possible this should be clearly recorded.

It is acknowledged that a good fundal view is not always possible due to limited co-operation from a child or to avoid causing them distress. Where this is the case it should be clearly recorded and reasons stated.

6.5 Leavers

This will include young people up to the age of 25.

The Special Schools Ophthalmic Team should engage with local community optometrists and dispensing opticians to facilitate transition to community based care on leaving school. A final eye care and vision report should be issued for all leavers with advice on seeking ongoing care in the community.

Ideally there should be a local enhanced pathway for adults with learning disabilities that allows referral into suitable eye care providers in the area. For example Warrington has developed a transition pathway and a vision passport and in a growing number of areas LOCSU Community Eye Care Pathways for Adults and Young People with Learning Disabilities are being commissioned.

6.6 Onward Referral

If there is a change in visual status or visual ability then onward referral should be made according to the examining clinician's judgement and up to date advice of their professional bodies. This is likely to be in the case of new or acute pathology identified or suspected as a result of the in-school visual assessment or cases of pathology or reduced vision not previously investigated by an ophthalmologist. Local referral pathways should be into ophthalmology clinics adapted for children with special needs.

Where a child is under the care of a paediatrician, the paediatrician and general practitioner should be informed of the referral. Where visual deficits of a stable or pre-existing nature are identified in the visual assessment, these should be included in written reports supplied to parents, teachers and any eye and health professionals currently associated with the child.

All children with reduced visual acuity or other visual difficulties, should be referred for the input of a Qualified Teacher for the Visually Impaired and for input into their Education and Health Care Plan in line with local protocols.

6.7 Spectacle Dispensing

To support successful spectacle wear and to avoid difficulty in accessing opticians and suitable spectacles, this service should be offered in school.[6] An appropriate choice of suitable frames should be made available and regularly reviewed and updated. Children who attend special schools may often require specialist or adapted frames. Equipment for basic spectacle repairs and adjustments and head straps etc. should form part of all equipment kits, see **Appendix E**.

The team's dispensing optician at the school should undertake ongoing support with spectacles fitting, repairs and adjustments. This will support successful spectacle wear and avoid the need for additional appointments outside of school for this service.

The annual assessment will also allow for fair wear and tear to be assessed, and

[6] Please also see section 6.1 on option to take a spectacle prescription voucher to an optician to get spectacles fitted.

for necessary spectacle repairs and replacements to be addressed including broken /lost spectacles that parents/teachers haven't managed to report.

6.8 Reporting/ Information Sharing

A report in lay language should be issued to parents and teachers following every examination. Where spectacles are needed and where there are any ocular or visual concerns, this report should also be sent to the child's General Practitioner and paediatrician (where the child is under a paediatrician). The following form produced by SeeAbility in collaboration with Ulster University, can be used www.seeability.org/uploads/files/Children_in_Focus_campaign/Childs-eye-test-results.pdf.

A reporting form should include details of any spectacle prescription and advice for when spectacles should be worn and details of any other visual or ocular problems.

Strategies for necessary adjustments to support children with visual or ocular problems should be included. For example, in the case of reduced visual acuity, examples of font or image sizes should be provided. As far as possible the type and level of refractive error should be explained to parents and teachers. This information should be shared with a Qualified Teacher for the Visually Impaired.

Similarly, advice around spectacles adaption should be given and where possible ongoing support should be provided to help the child or young person get used to wearing spectacles. In the case of visual field defects, nystagmus and other relevant conditions advice for position in the classroom/positioning of work/compensatory head postures should be provided.

As noted in 6.6 anyone who has had a change in visual status, a new problem identified, or any concern in accordance with clinical judgment should be referred for ophthalmological management in line with local arrangements (the child's General Practitioner and paediatrician should be informed of the referral).

Efforts should be made to facilitate a good two-way flow of information between the service and local secondary care services to avoid duplication of effort and unnecessary stress to the child or young person.

7. Service Management and Clinical Governance

The co-ordination of the programme should be led by a professional with an orthoptic, optometric or ophthalmological background to ensure that pathways are integrated into and out of hospital eye clinic services and there is an effective two-way flow of information.

Initially, there should be an annual audit of all services, which may decrease over time as the service becomes more embedded. A system of national data collection should be established through the formation of links between services. The audit of services should include a patient/parental/school satisfaction audit.

8. Training and accreditation of the Special School Ophthalmic Team

Optometrists, orthoptists and dispensing opticians will hold a current qualification and be accredited by the appropriate regulatory bodies. Their qualification ensures competency in core areas including working with children and vulnerable people.

All clinical staff should complete appropriate safeguarding training, be able to identify a safeguarding lead to contact where safeguarding concerns arise and be Disclosure and Barring Service (DBS) checked.

Anyone working within the service must be familiar with the needs, circumstances and context of children with special educational needs and be confident in interacting with this client group. All clinicians must be aware of how important it is to feed vision into the child's special educational needs plan.

The development of a nationally recognised accreditation for working with children with learning disabilities is proposed and this should become mandatory for all professionals working in a Special Schools Ophthalmic Team.

APPENDIX A

Prevalence of sight problems amongst children with learning disabilities

Studies have reported on the greatly increased risk of significant visual problems in children with neurodevelopmental impairments when compared to the general population (Salt and Sargent[7]) and SeeAbility has estimated visual impairment to be of the order of 28 times more likely.[8]

Below provides some illustrative prevalence rates taken from studies of children with learning disabilities in special schools.

For example, Das et al studied 240 children in six special schools in Glasgow[9] and Woodhouse et al[10] studied 173 pupils in 5 special schools in Wales. Both studies found around 50% of children educated in a special school setting have refractive error requiring spectacle correction. In Warrington's service levels of refractive correction include 21% of children on the ASD pathway, 51% on the complex needs pathway and 81% of those on the Down's Syndrome pathway (Greenwood. personal communication from Warrington audit).

In terms of strabismus, in the Warrington service 43% of children had a manifest or latent strabismus (Greenwood, personal communication from Warrington audit). In SeeAbility's second year of data, 28% of children had a manifest strabismus and/or significant ocular movement disorder.[11]

SeeAbility's second year analysis found 11% of the children seen had an ocular disorder (excluding refractive/binocular vision anomalies) In Woodhouse et al 47% of pupils had at least one ocular disorder. It is also recognized that Cerebral Visual Impairment is prevalent in this population of children.[12]

Overall some form of visual anomaly has been identified in 62% of pupils in the Warrington service (Greenwood, person communication from Warrington audit), and 50% of pupils tested in the SeeAbility project.

Indications are (SeeAbility) 85% of children attending special school would either be unable to perform or would fail the vision screening test as set out in National Screening Committee guidelines, which is why this is not suitable for these

[7] Alison Salt, Jenefer Sargent. Common visual problems in children with disability. Arch Dis Child (2014);99:12 1163-1168 Published Online First: 27 August 2014

[8] The estimated prevalence of visual impairment is 0.2% of the general population of children (Vision 2020, 2015) compared with an estimated prevalence of 5.66% amongst children with learning disabilities (Emerson and Robertson, 2011. The estimated prevalence of visual impairment among people with learning disabilities in the UK).

[9] Das M., Spowart K., et al. Evidence that children with special needs all require visual assessment. Arch Dis Child (2010) 95(11): 888-892.

[10] Woodhouse JM et al. Ocular and visual status among children in special schools in Wales: the burden of unrecognised visual impairment. Arch Dis Child (2013); 99(6):500-504.

[11] '28 times more likely' The Children in Focus Campaign second annual review (2016) SeeAbility.

[12] Nielsen LS et al. Visual dysfunctions and ocular disorders in children with developmental delay I. Acta Ophthalmol Scand (2007);85:149-56

children.

Despite being such a high-risk group, children in special schools are also at high risk of not having eye care. SeeAbility estimates around 4 in 10 of children in special schools it works in have no previous eye care history, in Woodhouse et al this was 38% of the children tested. These pupils ranged in age from 4 years to 21 years. In Pilling (Bradford study, unpublished) 40% of parents were not aware their child had a vision problem before assessment. In Das et al, 35 pupils with a learning disability (20% of those tested) not currently wearing spectacles could have benefitted from a new correction.

APPENDIX B

The benefits of operating an eye health care service in special schools in England

1. ***Minimal disruption to education and routine*.** Children may often have to miss days from their education attending healthcare appointments. In-school appointments can be arranged at a convenient time with minimal disruption- less than an hour of the school day is lost.

2. ***Reduced parental/carer burden*.** Parents don't have to take time off work to attend the school appointment with their child, although they can if they wish. Parents may often be struggling with the many out of school healthcare appointments their child is required to attend and time off work/transport (both logistics and costs of) can be a major issue.

3. ***Familiarity of environment.*** The school offers a safe, familiar environment for the children. This minimises stress which is not only a benefit in itself but also means children co-operate better with assessments, and clinical staff benefit from the advice of teaching/support staff who are present and know the child well. The model is particularly beneficial for children with autism who SeeAbility has found are significantly more likely to have no history of eye care.

4. ***No wasted appointments*.** If children are off sick or having a bad day in terms of health or behaviour, their appointment can be postponed or another child can be seen. This is particularly cost effective and efficient when compared to the need to re-arrange hospital eye-clinic appointments if a child does not attend.

5. ***Flexibility of appointments.*** If children are very anxious they can have familiarisation sessions in the test room with the clinicians prior to their appointment and/ or an appointment can easily be broken down into manageable short sessions. Changing appointments in this way is more difficult in secondary and community care.

6. ***Spectacles easier to access*.** High numbers of children in special schools need spectacles, and with spectacle dispensing as part of the service spectacles can be fitted, adjusted and repaired at school. Sometimes those repairs can be on the spot, reducing the time the child is without their spectacles, and spectacle dispensing expertise is accessed quickly. This reduces the risks (and costs) of children not picking up prescriptions or spectacles outside school.

7. ***Spectacles wear sustained.*** Other possible barriers to successful

spectacles wear are sensory and behavioural issues, difficulty in providing comfortable, well fitting spectacles as well as stronger prescriptions being harder to adapt to. A presence in the school can help to improve this situation and ongoing support with spectacle adaption, and advice so they are worn as needed, can be provided.

8. ***Communication and links with education.*** The test findings can be immediately communicated to teachers and in appropriate ways that maximise the benefit to a child's education. It is known that visual needs of children with special educational needs are often not noted in their educational plans and statements (Woodhouse et al, Little et al), so working in special schools addresses this shortfall. The easy access to clinicians also means questions can be answered, and clinical terminology explained. The availability of a QTVI within school is extremely beneficial in ensuring that visual needs of the child are fully incorporated in their education.

9. ***Continuity of care.*** It is easier to organise clinics so that children get continuity of care - the same clinical team can be assigned to each school so that children become familiar with their clinicians, again reducing stress and improving co-operation.

10. ***Clinical team specialised in working with this group of children***. Clinicians will be experienced and able to adapt their assessments appropriately for children's needs. This includes having access to the most appropriate tests and equipment and having experience and knowledge around visual problems this group of children are likely to experience (for example high refractive error, eye movement problems).

APPENDIX C - Current clinical recommendations

General Ophthalmic Service Sight Test

The testing of sight is defined as *'determining whether there is any and, if so, what defect of sight and of correcting, remedying or relieving any such defect of an anatomical or physiological nature by means of an optical appliance prescribed on the basis of the determination' (s.36(2))*.[13]

The clinical tests involved require the practitioner[14]:

(a) To perform, for the purpose of detecting signs of injury, disease or abnormality in the eye or elsewhere –

1. *(i) An examination of the external surface of the eye and its immediate vicinity,*
2. *(ii) An intra-ocular examination, either by means of an ophthalmoscope or by such other means as the doctor or optometrist considers appropriate,*
3. *(iii) Such additional examinations as appear to the doctor or optometrist to be clinically necessary.*

Eligibility for a NHS funded sight test is set out under regulations[15] for children and young people who are under the age of 16 years, or under the age of 19 years and receiving qualifying full-time education. For young people over this age eligibility is dependent on other qualifying criteria such as income or medical history.

The British and Irish Orthoptic Society has provided a summary of orthoptic standards of assessment for children with special educational needs. These are new standards for orthoptic assessment which are due to be ratified by BIOS in May 2016. In the interim, an abridged version of these recommendations are below which includes guidance to:

- Ensure children with learning disabilities have a detailed orthoptists assessment of their visual abilities and changes in their condition are monitored.
- Ensure that all information is obtained to make a full diagnosis, in combination with the ophthalmic team where necessary, and to ensure all people involved in the care of the child (parents, teachers and support workers, and medical practitioners) have this information.

The recommendations provide a structured protocol of case history (including structured history taking) and observations, and recommend the following tests:

[13] Opticians Act 1989 section 36.
[14] The Sight Testing (Examination and Prescription)(No2) Regulations 1989
[15] Primary Ophthalmic Services Regulations 2008

Visual functions

All children should have a standardised assessment of Visual Acuity (VA), with the choice of test being determined by the child's abilities.

Quantitative assessment of VA should be undertaken wherever possible meeting the following criteria:

- *Tested monocular and binocular*
- *Using a proven valid test with normative data*
- *Near vision tested where possible*

If a child is unable to name or match optotypes, a reliable preferential looking test should be attempted.

If a quantitative assessment is not possible, a qualitative assessment of VA should be undertaken with standardised procedures.

- *Contrast sensitivity (CS)*

This should be assessed, where possible, the gold standard test is the Pelli Robson chart, but available paediatric tests include Hiding Heidi, Lea low contrast symbols and the Lea grating test.

- *Visual field assessment*

Assessing fields by confrontation is required and needs to be standardised where possible.

Eye alignment

The presence of any type of strabismus should be identified using the cover test at near (to a light and an accommodative target) and distance, with and without glasses.

Eye movement systems

Assessment of the following eye movement systems should be undertaken where possible, under monocular and binocular conditions, noting the speed, quality and end point of the eye movements:

- *Smooth pursuit*
    - *Assessed in 9 positions of gaze*
    - *Record results described in the BIOS diagrammatic ocular movements document*
- *Saccades*
- *OKN*
- *VOR*
- *Vergence (binocular only)*

Binocular vision

Assessments should be undertaken to identify the presence of binocular vision and if present, quantify the degree of motor fusion and stereoacuity.

Assessment of pupil function

Responses elicited to direct and consensual stimulation of each eye and responses to an accommodative target.

Refraction

This should be undertaken following cycloplegia if necessary.

- *Dynamic retinoscopy*

To be performed to determine whether the child is able to accommodate appropriately, normative data are available for the interpretation of findings.

- *Fundus and media examination*

This should be undertaken by an appropriately trained member of the ophthalmic team to identify any defects.

The recommendations also allow for additional tests depending on the above findings, a protocol for reporting findings and referral on for additional tests for further investigation by another member of the ophthalmic team or wider multi disciplinary team.

The College of Optometrists online guidance website sets out principles of examination for those with learning disabilities[16]. This includes guidance to:

- *attempt visual field assessment, even if only by using confrontation techniques*
- *use cycloplegic examination, if necessary, to determine the full refractive error*
- *use mydriasis, if necessary, to internally examine the eye*

The Guidance also addresses needs of younger children (defined as those who are too young to have capacity to consent)[17].

- *have a range of tests to assess the child's monocular vision and visual acuity, based on age and ability of the child*
- *assess ocular muscle balance, using objective and, when feasible, subjective methods*

[16] See: http://guidance.college-optometrists.org/guidance-contents/knowledge-skills-and-performance-domain/examining-patients-with-learning-disabilities/#open:83

- *assess stereopsis. Having good stereopsis may indicate the child does not have significant anisometropia, amblyopia or squint*
- *assess refractive error, often only possible by objective means in young children. Where necessary use cycloplegic drops to obtain an accurate result*
- *assess accommodation, often only possible by objective means in young children*
- *assess the health of their eyes, in young children a good view of the fundus may be difficult to obtain but you should attempt to determine normal ocular development. At the very least, you should obtain a clear view of the ocular media, disc and macula.*
- *Screen colour vision where relevant.*

Royal College of Ophthalmologists Ophthalmic Services Guidance (Ophthalmic Services for Children) summarises the view of the Paediatric Subcommittee in terms of advice for high risk groups:

Targeted clinical surveillance of certain groups at high risk of ophthalmic disorder is recommended (incorporating a full orthoptic examination, cycloplegic refraction and fundus examination).

These groups include children with:

- *Sensori-neural hearing impairment*
- *Neurodevelopmental impairments including Down's Syndrome*
- *A family history of a childhood onset ophthalmic disorder eg. retinoblastoma*

Where appropriate, these examinations should be performed in community settings.

The Hall report recommends, in its discussion on babies and those in early years:

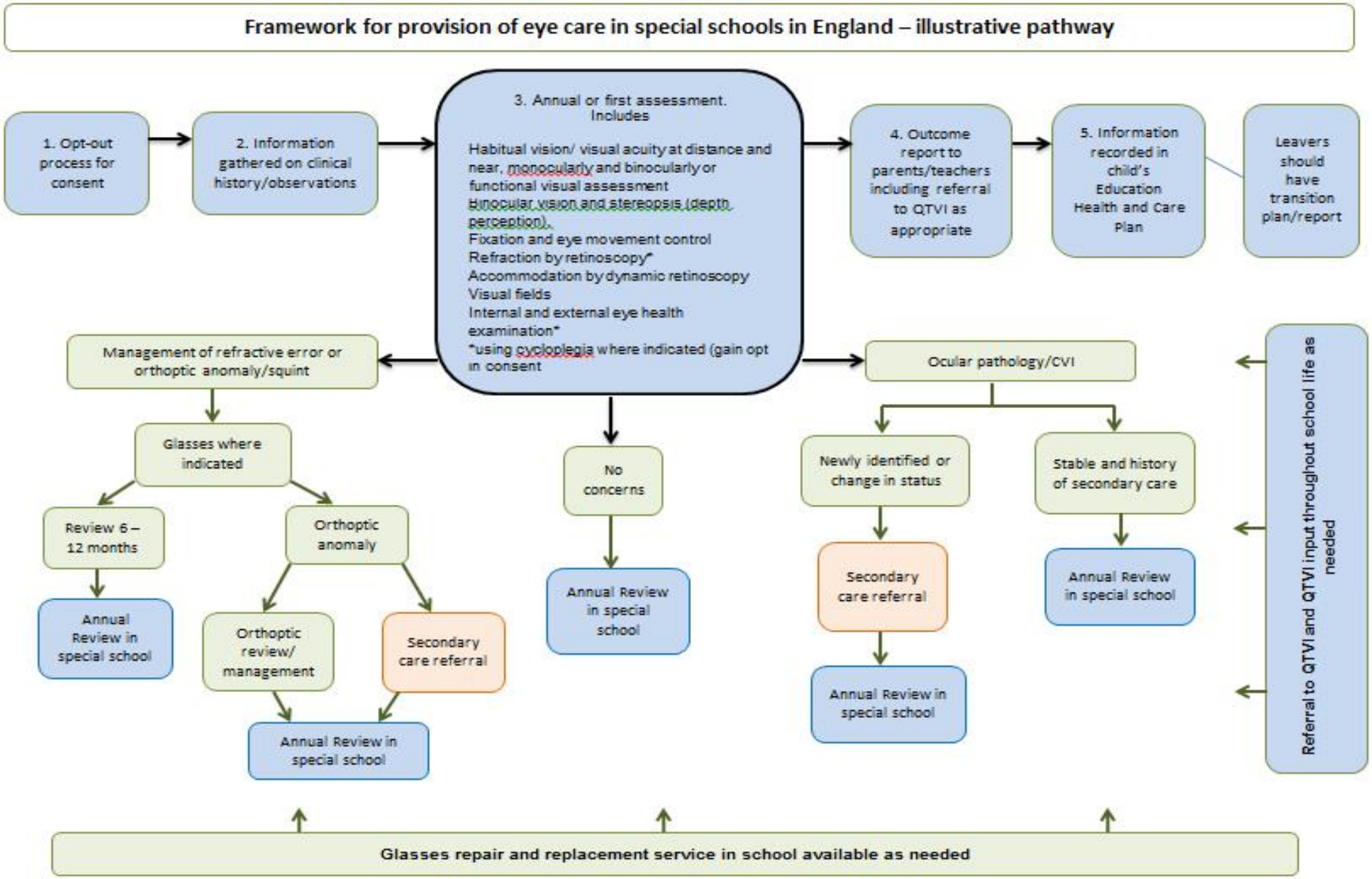
All children with dysmorphic syndromes or neurodevelopmental problems should undergo a specialist eye examination as some may have serious defects of vision.

And under "Screening for non-disabling visual defects"

Children of any age with suspected visual deficits, a significant family history or any neurological or disabling condition, should be referred routinely for a visual assessment.

NICE clinical guideline CG128 Autism in under 19s: recognition, referral and diagnosis also recommends that assessments/referrals for co-existing conditions such as vision or hearing impairments are considered in the diagnosis process for autism.

APPENDIX D – Illustrative flowchart



APPENDIX E – Suggested Equipment list

Equipment List

Kays crowded LogMAR 3m and near test
Kays singles LogMAR 3m and near test
Keeler crowded LogMAR 3m test
Keeler Preferential Looking Cards/ Lea Paddles and/or Teller acuity card
Cardiff Preferential Looking Cards (acuity)
Cardiff Preferential Looking Cards (contrast)
Ulster-Cardiff accommodation cube
Colour testing made easy (Waggonner)
Trial lens set
Oculus universal trial frame
Cross cylinders single 0.25, 0.50, 1.00
Retinoscope Set 3.6V
Panoptic/ or 20D lens and headset/ direct ophthalmoscope
Fixation Sticks/ Lea wand
Pen torches
Occluder
Spectacle pinhole occluder
Prism bars horixontal and vertical
10 ^ prism
20 ^ prism
4 ^ prism
Frisby stereo test
Frisby Screening stereo test
Lang I and II stereo tests
Flashing fan fixation target/other fixation toys/lights
Occluding spectacles
iCare tonometer

Dispensing Equipment

Spectacle frame fitting set
Dispensing spares box, including straps/headbands
Copy of BS/ISO tolerances for finished spectacles
Files and locknut wrenches
Frame heater
Progressive power templates
Lens measure
Facilities for repairs/frame adaptations
Appropriate rules to measure frames and faces
Range of pliers for adjustments to include the following:
Round snipe nose pliers / flat nose pliers/ / rim-forming pliers/ parallel jaw pliers / side cutters
A means of measuring Vertex distance (Vertex distance callipers or ruler)
Corneal reflex pupilometer if appropriate
Head calipers
Lens thickness calipers
Uncut size determinator

Ophthalmic Drugs

Cyclopentolate 1%
Fluorescein Sodium

Infection Control

Antibacterial Hand Gel
Antibacterial Wipes
Spectacle Cleaning Wipes
Ziploc bags x12
Gloves
Paper Towel/Tissues

APPENDIX F

This paper was produced in 2015/16 as a collaboration involving SeeAbility and:

Barry Duncan, Dispensing Optician and Head of Policy and Development, **Association of British Dispensing Opticians**

Veronica Greenwood, Head Orthoptist, representing the **British and Irish Orthoptic Society**

Dr Cindy Tromans, Consultant Optometrist and Chair of the College of Optometrists Board of Trustees, **College of Optometrists**

Dr Margaret Woodhouse OBE, representing **Children's Vision Service Advisory Group Wales**

Nicola Crews, representing **Children's Vision Service Advisory Group Wales**

Professor Kathryn Saunders, Professor of Optometry and Council member, **College of Optometrists**

Katrina Venerus, practicing Optometrist and Managing Director, **Local Optical Committee Support Unit**

Gordon Ilett, practicing Optometrist, representing the **Local Optical Committee Support Unit**

Jane Leitch, Consultant Ophthalmologist, representing the **Royal College of Ophthalmologists** (paediatric sub committee)

Dr Jenefer Sargent , Consultant Developmental Paediatrician, representing the **Royal College of Ophthalmologists** (paediatric sub committee)

The group was convened under an agreed Terms of Reference. SeeAbility participation included: Paula Spinks Chamberlain, Director of External Affairs, Laura Christie, National Manager for Families and Children, Donna O'Brien, Public Affairs Officer and Lisa Donaldson, Clinical Lead Children in Focus Campaign.