



Audit of Vision Screening in Special Education Schools in Northern Ireland

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Executive Summary

In Northern Ireland, 22% of children have special educational needs and of those 30% are educated in a special education school¹. Vision screening is offered in all mainstream education schools to all children at age 4-5 years (primary one) in Northern Ireland². However, the delivery of vision services within special education schools is not consistent across trust areas. Two Health & Social Care Trusts (HSCTs) offer Orthoptic delivered vision assessments, a holistic assessment of all aspects of vision, including screening for amblyopia by a state registered Orthoptist, in conjunction with an Optometrist. Three other HSCTs offer vision screening conducted by School Nurses, and occasionally paediatricians, to detect amblyopia by the testing of visual acuity using the Keeler logMAR crowded test.

A recent Belfast Health and Social Care Trust (BHSCT) audit³ into non-attendance at community children's eye clinics revealed that in North Belfast 50% and West Belfast 25% of non-responders to partial booking letters were children with special educational needs.

The perceived inconsistencies of vision services across Northern Ireland in special education schools prompted this audit. The aim of this RQIA regional audit is to understand vision screening practices in special education schools, identify the professionals delivering vision services and evaluate the outcomes of vision screening delivered. The audit was also developed to identify if there is any unmet need, by examining the data provided by Child Health Systems (CHS) within the specified audit period.

The CHS is a universal surveillance system which records information on health checks, vaccinations and screening programs (including vision screening) for all children from birth. The school attended by a child can be identified using this system. The CHS collates data in four geographical areas which relate to the previous four Health and Social Care Board areas:

- **Northern** (Northern Health and Social Care Trust (NHSCT))
- **Southern** (Southern Health and Social Care Trust (SHSCT))
- **Eastern**, (BHSCT and South Eastern Health and Social Care Trust (SEHSCT))
- **Western** (Western Health and Social Care Trust (WHSCT)).

For those children attending special education schools, it is recommended that they receive a vision assessment in their school.⁸ The audit examined CHS data for 232 children in special education schools born between 2/07/2008 and 1/7/2009. The data identified that 214 of 232 children were examined and 18 children were either not examined (15) or no information was recorded (3).

Over two thirds, 67% (144 of 214) of children received vision screening conducted by a School Nurse, 26% (56 of 214) received vision assessment conducted by an Orthoptist and 5% (11 of 214) children by an 'Other' (including Paediatrician). Three children (1%) had no information recorded in relation to their vision assessment.

Seven percent (15 of 232) children did not have their review recorded or they were not examined.

Of those 144 children screened by the School Nurse:

- 46 children passed.
- 95 children failed.
- 3 children did not have a result recorded.

Of the 95 children that failed vision screening:

- 24 children did not attain the required visual acuity.
- 19 were unable to communicate.
- 14 were unable to cooperate.
- 30 did not have the appropriate tool used.
- 8 children did not have the tool recorded.

For children failing vision screening onward referral to Orthoptics is stipulated in the School Nurse training manual. However, this audit evidenced that 65% (62 of 95) of children did not have a documented onward referral on CHS.

This audit has identified inequitable vision services for children attending special education schools in Northern Ireland and that the current vision screening tool is not appropriate when reviewing this complex paediatric population.

Table1: Standards for Audit and Compliance Levels Achieved

	Standard	Target	Achieved
*1	Achieve uptake rates for vision services in special education schools in line with those in typically developing populations. ^{4,5}	80%	92% (214/232)
*2	Demonstrate a high prevalence of reduced vision in children with learning and / or physical disability attending special education schools. ⁶⁻⁹ <i>(Completion of vision screening using Keeler logMAR crowded test - irrespective of who conducted).</i>	Baseline	38% (87/232)
**3	Children attending vision screening should achieve levels of test cooperation in line with those in other centres. ^{6,10}	88-95%	15% 14/95
**4	School nurse to use appropriate tool Keeler logMAR crowded test. ¹¹	100%	51% (73/144)
Onward Referral required as per Audit criteria			
**4i	Onward referral documented if inappropriate tool use within vision screening. ¹¹	100%	11% (4/38)
**4ii	Onward referral documented for any child who did not achieve equal to or better than 0.2 logMAR in either eye (using Keeler logMAR crowded test). ¹¹	100%	46% (11/24)
**4iii	Onward referral documented for any child who was, non-compliant (including those unable to communicate) or unable to co-operate for visual screening for amblyopia. ¹¹	100%	42% (14/33)
***4b	Any child who consented but was unable to be tested before the end of the school year should be referred. ¹¹	100%	0.9% (2/214)

Standards* 1 and 2 relates to the complete population sample (n=232). Standards** 4, 4i, 4ii & 4iii relates to the School Nurse sample (n=144) and relevant subsections of this population.

Standard*** 4b relates to active uptake of vision services in special education school (n=214)

Background/Rationale

Vision screening at the point of school entry is recommended for every child.^{2,11,12}

The purpose of this screening is to detect the presence of amblyopia* which has a reported prevalence of 2-6% in typically developing children.¹³⁻¹⁵ In Northern Ireland, vision screening for amblyopia is an orthoptic-led service delivered in mainstream education schools by School Nurses trained by Orthoptists¹¹. During vision screening one aspect of vision, visual acuity is tested (for the presence of amblyopia), using the Keeler logMAR crowded test (Figure 1a & 1b).

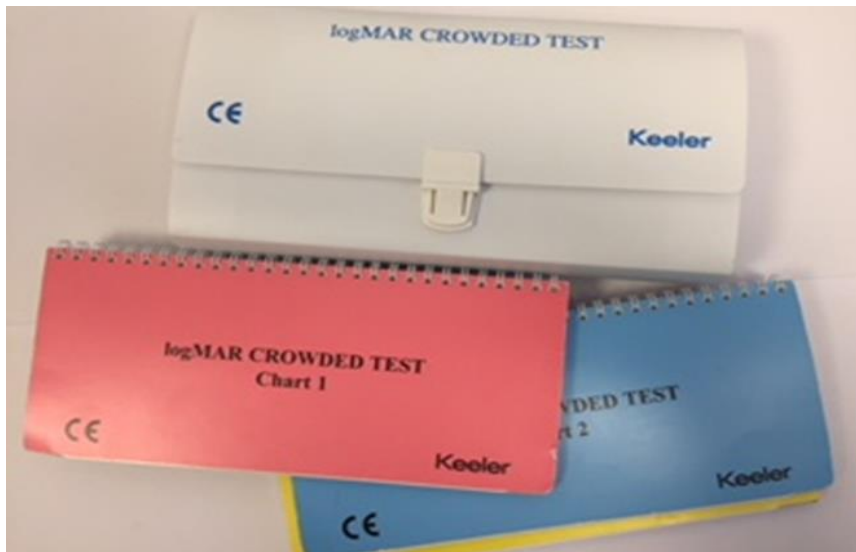


Figure 1a: Keeler logMAR crowded test



Figure 1b: example of test plate in the Keeler logMAR crowded test

For children with neurodevelopmental, learning and/or physical disability, it is acknowledged that the prevalence of visual anomalies, including amblyopia, is significantly higher with up to 77% of children noted to have a visual anomaly.⁶⁻⁹ It is therefore recommended that these children have an enhanced specialist eye examination and assessment by a multi-disciplinary team of appropriately trained eye care

* Amblyopia is decreased vision in one or both eyes due to abnormal development of vision in infancy or childhood.¹⁹ It is a treatable condition and is therefore identified as a priority for screening by the UK National Screening Committee^{2,13}.

professionals^{6,9,12,15}. However, research suggests that up to one third of these children may not have accessed any vision services^{8,15} with undiagnosed visual anomalies potentially impacting on future development.^{17,18}

In Northern Ireland, 22% of all children with neurodevelopmental, learning and/or physical disability have a Statement of Educational Needs (SEN) and 30% are educated in special education schools.¹ Special education schools are defined under Article 3 (5) of the Education (NI) Order 1996 as a *“controlled or voluntary school which is specifically organised to make special educational provision for pupils with SEN and is recognised by the Department as a special school”*.²⁰

Healthy Child Healthy Future² is a framework developed by the Department of Health (DoH) for Northern Ireland which aims to ensure equitable access for all children, and their families, to healthcare, advice and guidance. This document includes recommendations on the timing of health surveillance screening including vision screening. Healthy Child Healthy Future² recommends orthoptic-led vision screening and orthoptic delivery of vision services in special education schools. At present this recommendation is not being met in all special education schools across Northern Ireland.

Some HSCTs provide vision screening by School Nurses and for some children a holistic vision assessment which includes all aspects of vision is conducted by secondary care eye care professionals e.g. Orthoptists in the eye clinic setting. Other HSCTs provide orthoptic assessments in the special education school setting. However, in some cases families seek out testing in primary care optometry practices. This inequity of vision service across Northern Ireland in special education schools prompted this audit.

Compliance with clinical assessment in familiar environments, such as day centres, has been shown to be greater than that in clinical settings in hospitals or health centres for individuals with learning disability.^{21,22} Anecdotal evidence through discussion with parents and professionals suggests that assessments within special education schools reduce patient anxiety and achieve improved compliance.

A recent Belfast Health and Social Care Trust Audit³ into non-attendance at community eye clinics by children referred, by among others, School Nurses revealed that in North Belfast 50% and West Belfast 25% of non-responders to partial booking letters were

children with special educational needs. The DoH²³ strategic document of Transforming Your Care recommends that clinical services are provided in a location that is most appropriate and convenient.

Standard 12 of The Learning Disability Framework states that healthcare delivery '*should be flexible and respond in a way that is completely suited to the needs of all children and young people who have a learning disability and complex physical health*'²⁴. Achieving this standard will permit children with disability to 'benefit greatly from sensitive, detailed assessments and care planning'²⁴ from eye care specialists including Orthoptists, Optometrists & Ophthalmologists in conjunction with all Health and Social Care (HSC) and education professionals. Therefore delivery of vision services in special education schools will help achieve the priorities of this DoH strategy.

Aim

To identify if a vision assessment, at school entry, is offered to all children in special education in Northern Ireland:

1. To understand vision screening practices for children in special education schools across Northern Ireland.
2. To identify professionals delivering vision services in special education schools.
3. To evaluate the outcomes of vision screening delivered by School Nurses for children attending these schools.

Objectives

The main objective of the audit is to review vision screening and access to vision services for children in special education schools and to identify if there is any unmet need by analysing the uptake rates. In Northern Ireland two Trust areas have Orthoptic delivered vision assessments for all children in special education schools. The other areas have mainly School Nurse delivered vision screening. Therefore one of the objectives is to determine if there is equitable vision testing services for these children:

- To evaluate the number of children in NI special education schools currently accessing recommended vision assessment.
- To determine the success rates for vision screening in this population.
- To document the frequency of onward referrals to secondary care eye care services.
- To produce recommendations for future eye care service delivery in this population.

Definitions

Vision assessment is a holistic assessment of all aspects of vision, including screening for amblyopia by a state registered Orthoptist, in conjunction with an Optometrist. In Northern Ireland, where eye care is delivered in special education schools, this is coordinated and conducted by a state registered Orthoptist and in some cases in conjunction with an Optometrist.

Vision screening is the testing of visual acuity by School Nurses using the Keeler logMAR crowded test to detect amblyopia. School Nurses only receive training in the use of the Keeler logMAR crowded test¹¹ and therefore do not complete a vision assessment as described below.

The CHS data will be analysed to identify the professional groups (Orthoptist, School Nurse, and Paediatrician) currently undertaking vision screening or assessments.

As the report will concentrate on the role of School Nurses the CHS data will be further analysed to identify:

- the uptake of visual screening among children in special education schools.
- the number of children unable to complete the Keeler logMAR crowded test due to communication or cooperation issues.
- the range of visual acuity tools used for vision screening.*
- the prevalence of children with suboptimal vision (suboptimal vision is described as a vision worse than 0.2logMAR in either eye).
- if those failing to meet the vision screening criteria were appropriately referred.

** Appropriate tool to be used by School Nurses is the Keeler logMAR crowded test*

Standards

Table 2: Standards for Audit

1	Achieve uptake rates for vision services in special schools in line with those in typically developing populations. ^{4,5}	80%
2	Demonstrate a high prevalence of reduced vision in children with learning and / or physical disability attending special education schools. ⁶⁻⁹ <i>(Completion of vision screening using Keeler logMAR crown test - irrespective of who conducted).</i>	Baseline
3	Children attending vision screening should achieve levels of test cooperation in line with those in other centres. ^{6,10}	88-95%
4	School nurse to use appropriate tool Keeler logMAR crowded test. ¹¹	100%
Onward Referral required as per Audit criteria		
4i	Compliance with audit criteria: Inappropriate tool use within vision screening requires onward referral. ¹¹	100%
4ii	Onward referral documented for any child who did not achieve equal to or better than 0.2 logMAR in either eye (using Keeler logMAR crowded test). ¹¹	100%
4iii	Onward referral documented of any child, non-compliant (communicate) or unable to co-operate for visual screening for amblyopia. ¹¹	100%
4b	Any child who consented but was unable to be tested before the end of the school year should be referred. ¹¹	100%

Standards 1 and 2 relates to the complete population sample (n=232). Standards 3 , 4, 4i, 4ii & 4iii relates to the School Nurse sample (n=144) and relevant subsections of this population.

Standard 4b relates to active uptake of vision services in special education school (n=214)

Methodology

This is a retrospective audit of vision screening information for all children attending a special education school (appendix 1) and born between 02/07/2008 and 01/07/2009. The Child Health System (CHS) is a universal surveillance system which records information on health checks, vaccinations and screening programs (including vision screening) for all children from birth. Using this system, the school attended by a child can also be identified. The CHS collates data from the four previously HSS Board areas and includes information from the Northern Health and Social Care Trust (NHSCT), the Southern Health and Social Care Trust (SHSCT), the Belfast and South Eastern Health and Social Care Trusts (BHSCT & SEHSCT) and Western Health and Social Care Trust (WHSCT). Information was requested from the CHS in relation to the following:

- Trust area
- School name
- Recorded vision
- Vision test used
- Examiner e.g. school nurse, orthoptist, etc
- Referral agency
- Reason vision screening not recorded

Initially, a Data Access Agreement (DAA) with all HSCTs was required to access CHS data. However, during this process a regional DAA superseded the need for individual DAAs, thus enabling the project to access the required CHS data.

Pseudo anonymised data were provided by the CHS manager and forwarded to the project lead via email, through the HSCT secure network, with all attachments password protected. On receipt, the project lead assigned a unique identifier code to each individual child and school, which was then populated onto a separate password protected proforma (Microsoft Excel spreadsheet). Only anonymised data were entered into the spreadsheet to enable data validation and analysis.

The data enabled the project team to make an informed decision as to whether a child had passed or failed school vision screening. For a child to 'pass' vision screening either of the following outcomes had to be achieved (Table 3).

Table 3: Vision Screening ‘Pass’ as Identified by Audit Criteria

Criteria for ‘Pass’
Vision screening recorded as equal to or better than 0.2logMAR* or better in both eyes using the Keeler logMAR Crowded test.
A vision assessment conducted by an Orthoptist.

* Please note that poorer vision is associated with a higher logMAR score e.g. 0.4logMAR denotes a poorer vision than 0.2 logMAR and would constitute a fail.

For a child to ‘Fail’ vision screening the following outcomes are to be considered (Table 4).

Table 4: Vision Screening ‘Fail’ as Identified by Audit Criteria

Criteria for ‘Fail’
Vision recorded as worse than 0.2logMAR in either eye when tested by a School Nurse using the Keeler logMAR crowded test.
Vision recorded by a School Nurse using any other test than the Keeler logMAR crowded test.
A child unable to communicate or cooperate with vision screening test conducted by a School Nurse.
A child that was absent from school and no vision was recorded.
A child that was recorded as ‘not examined’.
A child that had no data recorded.

If a child’s vision screening outcome was recorded as ‘fail’ then the project team reviewed the data to identify if a referral was made.

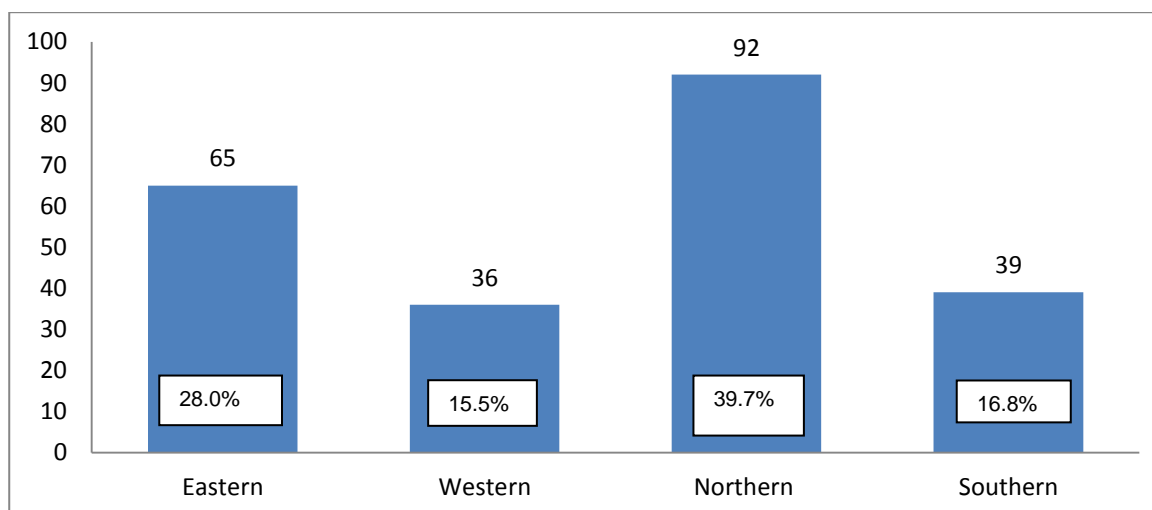
Audit Pilot

The data were received by the project team between autumn 2016 and spring 2017. The first 20 data samples obtained from CHS were used to pilot the proforma which was then amended for ease and accuracy of data entry. Data were received from each area and entered onto the spreadsheet. A random sample of 10% of the data was reviewed to verify accuracy of data entry. Data analyses were conducted using Microsoft Excel and were supported by Quality Improvement and Patient Safety Staff within BHSCT.

Findings

CHS data were collated into the four previously HSS board areas, Eastern (SEHSCT & BHSCT) Western, Northern and Southern. For the audit period, a total of 232 children attending special education schools was identified. A breakdown of each Board area is shown in Graph 1.

Graph 1: Number of Children in Special Education Schools Across the Four HSS Board Areas (n=232)



NB. Standards 1 and 2 relate to the complete population sample (n=232).

Standard 1: *Achieve uptake rate for vision services in special education schools in line with those in typically developing populations.*^{4,5} **Target 80%; Achieved 92.2% (214 out of 232).**

Vision screening/assessment uptake rate was determined by analysing data received from the CHS for those children where an outcome was recorded and for those children without a recorded outcome. The uptake rate describes children who have been consented but who are not necessarily able to complete the vision screening/assessment.

During the audit period within special education schools vision screening/assessment was identified for 232 children. Of those children, 214 (92.2%) were reviewed, 15 (6.5%) children were not tested and three had no record of a review taking place (1.3%).

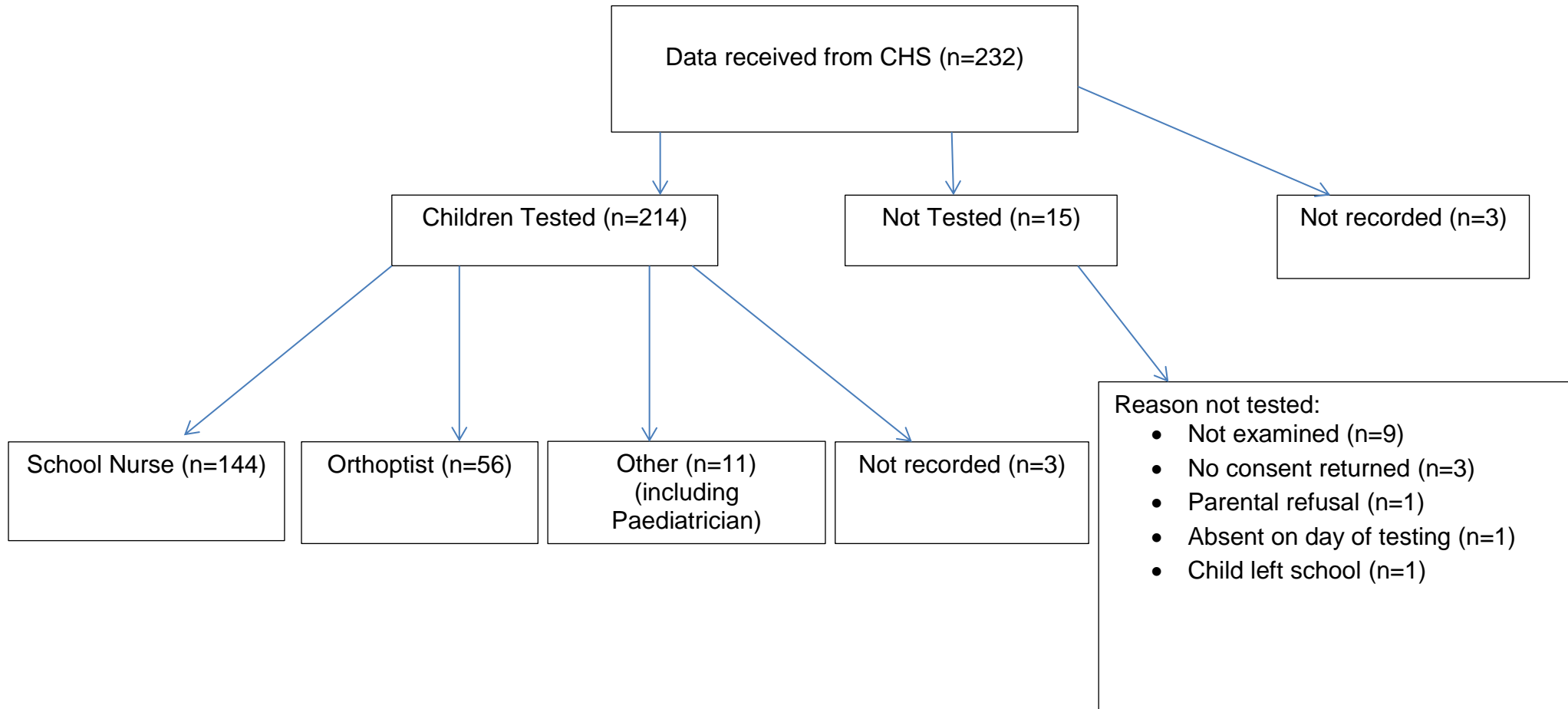
Of the 15 children not tested the reasons recorded were:

- Not examined (9)
- No consent returned (3)
- Parental refusal (1)
- Absent on day of screening (1)
- Child had left school (1)

The high uptake rate suggests parental engagement in appropriate vision assessment of their child.

Of the 214 children who received vision screening/assessment, 144 (67.3%) were conducted by School Nurses, 56 (26%) were conducted by Orthoptic services and 11 (5.1%) by others including Pediatricians. The remaining three children (1.4%) had no details recorded (Figure 2).

Figure 2: Flowchart illustrating the Professionals Involved in the Vision Testing of Children in Special Education Schools

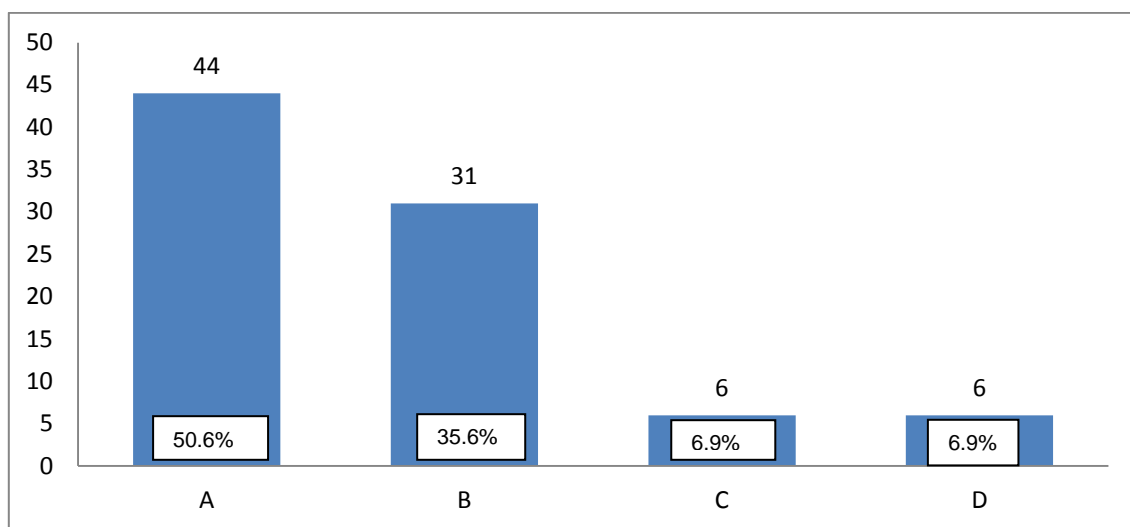


Standard 2: *Demonstrate a high prevalence of reduced vision in children with neurodevelopmental, learning and/ or physical disability attending special school.*⁶⁻⁹

No target identified. Achieved 37.5% (87 of 232)

Review of the data identified 87 of 232 children (37.5%) were able to complete the Keeler logMAR crowded test, irrespective of who conducted the test. Graph 2 illustrates the success rates across each board area.

Graph 2: Number of All Children Completing Keeler logMAR crowded test Across Each Board Area (anonymised) Regardless of Result (Pass/Fail) (n=87)



Of the 87 children tested using the Keeler logMAR crowded test Table 5 identifies the profession and the test results recorded, where available. In 84 cases the profession could be identified and in three cases the profession could not be identified.

Table 5: Results of the Keeler logMAR crowded test by Profession

Profession	Optimal vision (equal to or better than 0.2 logMAR in either eye)	Sub-optimal vision (worse than 0.2 logMAR in either eye)	Not recorded
Combined (84)*	51 (60.7%)	29 (34.5%)	4 (4.8%)
School Nurse (73)	46 (63%)	24 (32.9%)	3(4.1%)
Orthoptist (11)	5 (45.5%)	5 (45.5%)	1 (0.9%)

**Note: no profession was recorded against the results of 3 of the 87 children and these have been excluded from this table 5).*

It is reported in the literature that up to 77% of children with learning disability have a visual anomaly.⁶⁻⁹ Analyses of data identified that only 38% of children were able to complete vision screening with the Keeler logMAR crowded test and 34.5% of those children had sub-optimal vision (worse than 0.2 logMAR in either eye) which would suggest potential for reduced vision. In comparison, 60.7% of children had optimal vision (equal to or better than 0.2 logMAR in either eye).

The Keeler logMAR crowded test assesses only one aspect of vision; it does not detect all visual anomalies. School Nurses are trained to conduct the Keeler logMAR crowded test within schools (mainstream and special education school). The low numbers (38%) who were able to complete the screening test would suggest that the Keeler logMAR crowded test may not be the most appropriate test with this population of children. A holistic assessment delivered by a multi professional team would be more appropriate.

NB: Standard 3, 4, 4i, 4ii, 4iii relate to school nurse sample (n=144) and relevant subsections of this population.

Standard 3: *Children attending vision screening should achieve levels of test cooperation in line with those in other centres.*^{6,10}

Target: 88-95%; Achieved 15% (14/95)

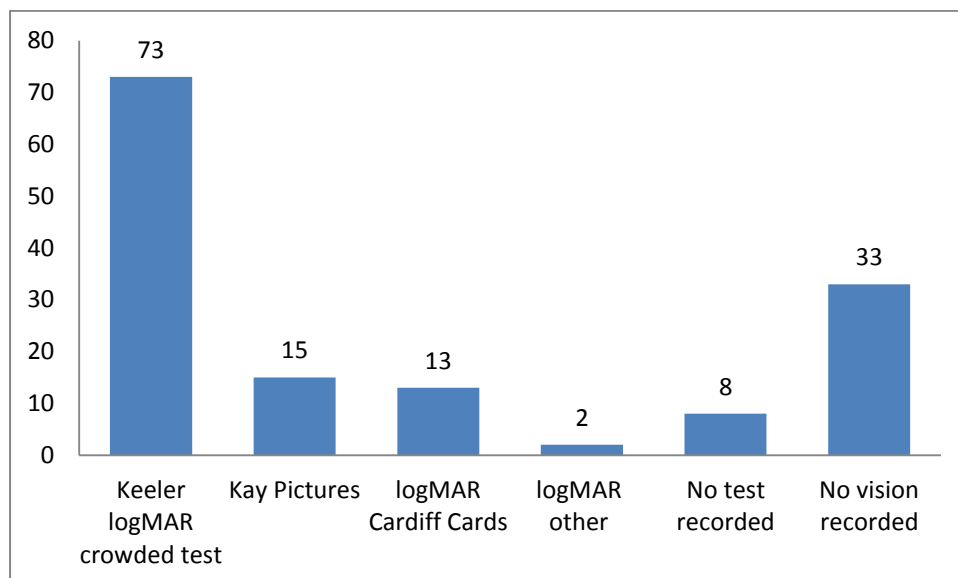
Of vision screening conducted by a School Nurse (144), 141 (97.9%) had information recorded that enabled the project team to determine the pass (46) and fail (95) rate for appropriate vision screening. Of the 95 children who failed vision screening conducted by School Nurses, 35% (33/95) of children were either unable to communicate (19) or to cooperate (14) and therefore unable to complete conventional School Nurse delivered vision screening in special education schools.

Standard 4: *School nurse to use appropriate tool Keeler logMAR crowded test.*¹¹

Target 100%: Achieved 51% (73/144)

School Nurses are trained in the use of, and should only use, the Keeler logMAR crowded test when conducting vision screening within schools; however the audit data indicated that other vision tests had been utilised. CHS data identified 51% (73/144) of the children screened by School Nurses had vision assessed using the appropriate Keeler logMAR crowded test. In 30 cases (21%) an inappropriate screening tool had been used; Kay pictures (15), logMAR Cardiff cards (13), logMAR other (2). In 33 children no vision test was recorded, as the child was either unable to communicate or cooperate with testing. In the remaining 8 cases (6%) the tool used was not identified (Graph 4).

Graph 4: Number of Vision Tools Used by School Nurses during Vision Screening



Standard 4i: *Where an inappropriate tool was used within vision screening or the tool used was not identified an onward referral should be made.*¹¹

Baseline: Achieved 11% (4 out of 38)

Inappropriate vision screening tools as per audit criteria were used in 30 cases and in 8 cases no tool was identified and an onward referral should have been made. However, onward referrals occurred in only 4 out of 38 cases (11%) (Graph 5).

Standard 4ii: *Any child who did not achieve equal to or better than 0.2 logMAR either eye using Keller logMAR crowded test should have an onward referral.*¹¹

Target 100% - Achieved 46% (11 out of 24)

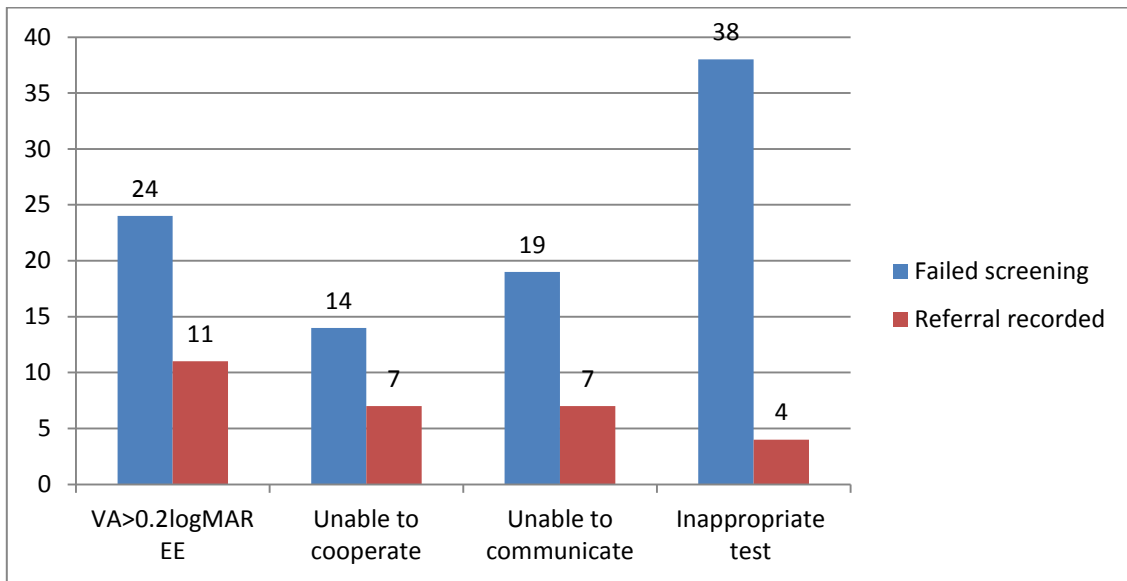
Within the training manual for School Nurses⁷ any child with suboptimal vision (worse than 0.2 logMAR in either eye) requires an onward referral to the school eye clinic/ orthoptist. Of the 95 children who failed vision screening, 24 (25%) should have had an onward referral. However of these children, 11 referrals were documented and 13 children had no referral recorded on the CHS (Graph 5).

Standard 4iii: *Onward referral documented for any child non-compliant (unable to communicate) or unable to cooperate for vision screening for amblyopia.*¹¹

Target 100% - Achieved 42% (14 out of 33).

Of the 95 children who failed vision screening as determined by the audit criteria 33 children should have had an onward referral as they were unable to complete conventional vision screening delivered by School Nurse, due to the child being either unable to communicate (19) or unable to cooperate (14). Onward referrals were documented in 14 cases, whilst 19 children had no documented evidence of onward referral (Graph 5).

Graph 5: Number of children ‘Failing’ Vision Screening and the Number of Onward Referrals Recorded.



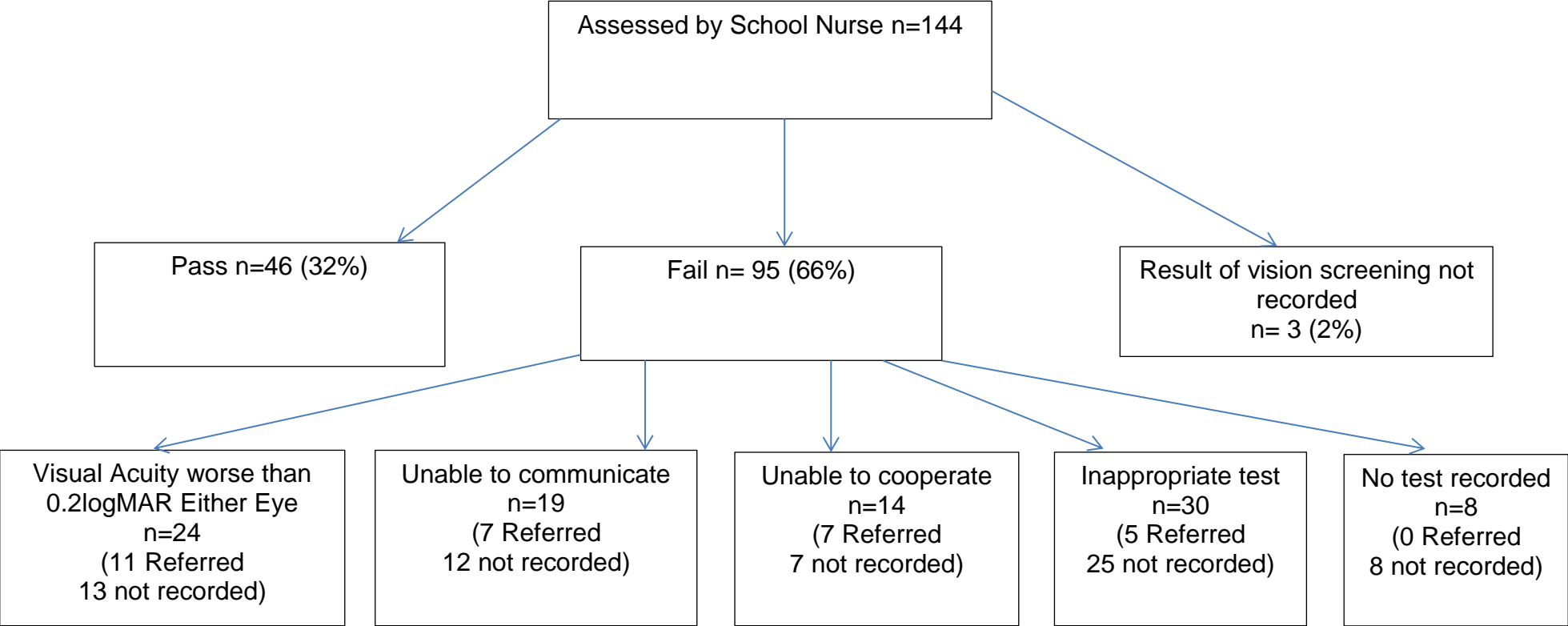
Of all children who failed vision screening by School Nurse, 66% (95 of 144) were identified using the audit criteria; 31% (29 of 95) in total were noted to have an onward referral as appropriate. However, for the remaining children 69% (66 of 95) no onward referral was recorded.

Standard 4b: Any child consented but was unable to be tested before the end of the school year should be referred.¹¹

Target 100%; Achieved 2/214

Any child unable to be tested during the school year due to absence from school or having left the school, a referral should be made to the orthoptic service for review. From the data collected, two children were not tested onward referral is not recorded for either of these cases.

Figure 3: Outcome of Vision Screening for Children Assessed by School Nurses



Discussion

In Northern Ireland, vision screening conducted by School Nurses is offered to all children attending mainstream schools. However, for those children with neurodevelopmental learning and/or physical disability, attending a special education school, a holistic vision assessment covering all aspects of vision, conducted by eye care professionals, (i.e. Orthoptists) is recommended.^{6,9,12,15} In Northern Ireland, there is inequity between Trust areas with some providing vision screening by School Nurses, purely for amblyopia, while in others Orthoptists provide a holistic vision assessment assessing many aspects of visual function.

The audit identified that while School Nurses attempted vision screening for 62% (144 of 232) of children during the audit period, only 51% (73 of 144) were completed using the recommended screening tool (Keeler logMAR crowded test). This suggests that in this population the use of a single screening test as a marker of vision potential is unsuitable.

Review of the data identified that of the 95 children who failed vision screening and therefore required onward referral only 32% (30 of 95 children) had a referral recorded on CHS. This would suggest that either vision screening guidance is not adhered to in relation to 'when to refer' (as per School Nurse training manual) or that information is not being reported to or recorded on the CHS. These conclusions mean that the outcomes for children who fail vision screening within special education schools are unknown.

Changes are required to the present system of vision screening for children attending special education schools or special units within mainstream schools to ensure equity in the delivery of services and provide the necessary flexible approach to respond to the often complex needs of this population.

Learning

Contact with the Northern Ireland Education and Library Board, after CHS data had been provided, identified that there was a total of 323 pupils attending special education schools and special education units within mainstream schools. It is assumed that the discrepancy in the numbers identified for this audit was due to the non-inclusion of this cohort of children within special education units within mainstream schools, in the request forwarded to CHS (Figure 2).

The variable relating to consent provided by parent/guardian for vision screening was not requested from CHS. In hindsight its inclusion could have provided baseline evidence relating to the vision screening process.

The review of the CHS data identified that vision screening by School Nurses using a single screening test (the Keeler logMAR crowded test) as a marker of vision potential is unsuitable due to the low numbers able to complete the test.

Recommendations

Short term

1. Implementation of in-school orthoptic vision assessments for all children attending special education schools.
2. Improved recording of visual acuity outcomes on the CHS.
3. Improved recording of onward referral on the CHS.
4. Dissemination of audit to school nurse teams across Northern Ireland.
5. Dissemination of audit to HSC Trusts, professional groups, relevant stakeholders and third sector groups for example RNIB.

Long term

1. To implement vision assessments, rather than vision screening for amblyopia, by a multi-disciplinary eye care professional team for all children attending a special education school or special education unit within mainstream schools.
2. Develop vision assessment guidelines for eye care professionals conducting assessment in special schools and special education units within mainstream schools in Northern Ireland.

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Appendix 1- Project Team

Name	Job Title/Specialty	Trust	Role within Project (data collection, Supervisor etc)
Pamela Anketell	Paediatric Lead Orthoptist	BHSCT	Data collection, analysis & report writing, dissemination
Jenny Lindsay	Head Optometrist	BHSCT	Data collection, analysis & report writing, dissemination
Jane Hanley	Head Orthoptist	BHSCT	Data collection, analysis & report writing, dissemination
Jonathan Jackson	Head Optometrist	BHSCT	Report writing, dissemination
Fintan McErlean	Quality Improvement and Patient Safety	BHSCT	Statistical support

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Appendix 2 - Special Education Schools in Northern Ireland

School Name			
1	Ardmore House SS	21	Knockavoe School and RC
2	Arvalee School and RC	22	Knockevin SS
3	Beechlawn SS	23	Lakewood SS
4	Belmont house SS	24	Lisnally SS
5	Brookfield SS	25	Longslone SS
6	Castletower School	26	Mitchell House SS
7	Ceara SS	27	Oakwood School and AC
8	Cedar Lodge SS	28	Park Education RC
9	Clarawood SS	29	Parkview SS
10	Clifton SS	30	Rathore School
11	Donard SS	31	Riverside SS
12	Fleming Fulton SS	32	Roddenvale SS
13	Foyleview SS	33	Rossmar SS
14	Glenveagh SS	34	Rosstulla SS
15	Green Wood House AC	35	Sandelford SS
16	Harberton SS	36	Sperrinview SS
17	Hill Croft SS	37	St Gerard's Education RC
18	Jordanstown SS	38	Thornfield SS
19	Killard House SS	39	Tor Bank SS
20	Kilronan SS	40	Willow Bridge School



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