BRITISH ACADEMY
OF AUDIOLOGY

NHS Lothian Paediatric Audiology Governance Review 2021

CONFIDENTIAL

Contents

Executive summary

This report is based on clinical observation and staff interviews during a visit to the Paediatric Audiology Department in Lothian in October 2021, together with a review of departmental guidelines and policies. This process was requested by the board following the review by the Scottish Public Services Ombudsman (case reference 201901758) into the standard of care and treatment provided to a child in relation to their hearing which found significant failures in the diagnostic and testing process.

There is a very supportive and friendly departmental culture with high quality facilities. Staff are hard working and want to provide a high-quality service. The department has a structure with clear roles and responsibilities, regular team meetings and good communication both within and with other departments. The staff benefit from a wide range of continuous professional development (CPD), but none have completed any formal post-graduate training programmes and the majority of staff were trained in house to lead paediatric testing without any external assessment of clinical skills involved. The service has strong multidisciplinary working, with regular multidisciplinary clinics with input from paediatrics, ENT or both. Many elements of good practice were seen during clinical observation, including being very patient focused with strong team work, the high quality delivery of some appointment types, and most were carried out in accordance with appropriate guidelines. Significant concerns however, were also identified.

Two key routine hearing assessment techniques are not being carried out correctly. For one test, visual reinforcement audiometry (VRA), national guidelines are not being followed, and practice showed a significant lack of understanding of the scientific principles underpinning the test. No staff raised any concerns with this test technique. It was known by the head of department that the other technique, auditory brainstem response testing, was not being carried out according to the national guidelines. As a result there are real and significant clinical risks for delayed and missed diagnosis of permanent childhood hearing impairment, which could have life-long consequences for children and their families, and this may have been occurring for years.

Significant examples have been found when there seems to be a lack of scientific approach and the evidence base is not being used. For example, there were concerns around test selection, a lack of critical review of test results, over-reliance on parents reports of their child's hearing, some guidelines / protocols are inaccurate, and there was a lack of awareness of the benefits of aiding some hearing losses.

The root-cause of these issues seems to be two-fold; the vast majority of staff have been trained in house and do not have externally verified clinical competency qualifications; and a lack of scientific leadership, to include use and awareness of the evidence base, critical appraisal skills and clinical audit, has been inadequate.

As a result of the findings of this part of the review, 19 recommendations have been made. This includes significant staff education and training to ensure the delivery of a safe clinical service as soon as possible, to improve the quality of the clinical services and to ensure such issues do not arise again, a review of the structure of the department to ensure adequate scientific and operational leadership, and the development of a robust quality assurance programme with a clear line of sight to the responsible director. There is also a need to review of the newborn hearing screening programme to ensure it is supported appropriately.

The Paediatric Audiology team are hard working and strive to give a good service to patients and their families. If the recommendations are implemented successfully, the service should be safe, of good quality, and with good leadership, has the potential to be a centre of excellence in paediatric audiology.

Background

NHS Lothian asked the British Academy of Audiology (BAA) to carry out an on-site governance review of the Paediatric Audiology Department, as part of the work agreed following a review by the Scottish Public Services Ombudsman (case reference 201901758). This case investigated the standard of care and treatment provided to a child in relation to their hearing, and found significant failures in the diagnostic and testing process.

The ombudsman asked to Board to:

1. Review the failures in the diagnostic and testing process identified in this investigation to ascertain: how and why the failures occurred; any training needs; and what actions will be taken to prevent a future reoccurrence
2. Review the complaint handling failures to ascertain: how and why the failures occurred; any training needs; and what actions will be taken (or since then have been taken) to prevent a future reoccurrence

The Board asked the visit to focus on the following:

1. Review of the diagnostic and testing process to include the training of staff and the regular review of competency, both in undertaking and interpreting tests
2. Review of the systems and processes supporting the discussions and actions after inconclusive test result, who is that communicated to and what discussion takes place.
3. What is the 'line of sight' about the provision of services and the governance aspects from the service to responsible director, is this fit for 21st century purpose?
4. When and how often were clinical protocols in the department reviewed and by whom? What are the peer review processes within the between departments?

The visit was complementary to a case audit which has been completed separately and by different personnel, although key findings emerging from the audit which were felt relevant to the visit were shared in advance. The visit involved the observation of clinical work to assess the diagnostic and testing process, and interviewing staff regarding clinical governance. This aimed to identify the root-cause of any concerns raised by the audit and identify actions required.

The Paediatric Audiology Service at Lothian transferred to the NHS in 1997, having previously been provided primarily by Education. The department has been built up and developed over time to become a comprehensive Paediatric Audiology service now providing a range of clinics and screening programmes. The department has led the development of a number of multidisciplinary clinics, and has a particularly close working relationship with ENT and Paediatrics. The department moved into the new Royal Hospital for Children and Young People in summer 2020, and has several excellent clinical facilities, soundproofed according to the required standards and large observation rooms ideal for training and peer review. Staff facilities / space within the department has reduced compared to the previous dedicated department in Lauriston.

Method

Two registered Clinical Scientists with significant experience of paediatric audiology, including frontline service delivery, staff training and service leadership and management, completed the review. Three methods were used for this review; a document review, clinical observation and 1:1 interviews with staff.

The audit team used the NHS Scotland Quality Standards for Paediatric Audiology Services (QSfPAS) v2 (NHS Scotland, 2016) as a basis for the observation of clinical work, document and governance review. The QSfPAS criteria are given in appendix A, together with the examples of evidence given in the quality standards document, and how these relate to the scope of the review.

Clinic observation

The QSfPAS do not specify what is considered competent in terms of clinical skills and knowledge, so the BAA Higher Training Scheme module specifications for Paediatric Assessment were used for this purpose. These specify the level of skills and knowledge required to lead routine paediatric testing and have been agreed widely by the profession. Further details can be found at: https://www.baaudiology.org/careers/hts/. Clinical competency criteria are given In Appendix B, taken from the BAA Higher Training Scheme documentation.

A sample of audiology appointments were observed covering pre-school assessment, school age assessment, complex assessment, Hearing Aid review, Tinnitus / Hyperacusis, and the Multi-disciplinary Audiology Clinic. It should be noted that it was not possible to observe all staff, and the number of patients seen was limited due to the duration of the visit. Verbal consent was gained from each of the families prior to the appointment being observed. Audiologists were observed, and not examined; Audiologists were not asked to justify their actions nor their knowledge base interrogated.

The reviewers noted areas of good practice and any areas of concern for each of the cases seen.

Semi-structured interviews

Semi-structured interviews with staff were used to explore the current governance provisions and structure within the department, as well as the departmental culture. The culture of a department or organisation has been identified as being key for clinical governance (Zahir, 2001).

Topics included;

- Education, training and continued professional development, to include individual skills and confidence in paediatric audiology
- Evidence based care and effectiveness to include protocol development / review, access to and use of the evidence base
- Organisation & clinical leadership, to include annual appraisal and objective setting, team meetings, support and culture
- Risk management, to include what to do if there are concerns
- Clinical audit, including current awareness and involvement
- Managing and learning from complaints
- Departmental culture

With regard to departmental culture the topic explored were taken from Zahir (2001), and it was explored whether team members;

- Consider quality issues as part of core business
- Work together to improve performance
- Are willing and able to acknowledge their problems
- Value personal development and education
- Feel valued in their work
- Recognise the importance of the patient's experience of care and seek to obtain patients' feedback
- Seek ways of improving care as a matter of routine
- Proactively implement standards of care developed nationally

A topic guide was developed for the different staff groups, and is given in appendix C.

23 Individuals took part in the semi-structured interviews including Audiologists, Assistant Audiologists, Administrative staff, Management, ENT consultants, Paediatricians, Speech and Language Therapists and Newborn Hearing Screeners. The majority were face-to-face interviews; a few were carried out using MS Teams to avoid the need for staff to travel. All interviews were carried out jointly by both reviewers, who each made independent notes. These notes were used to identify themes to inform areas of good practice, and areas of concern with regard to clinical governance. The focus was on the core Paediatric Audiology service, however, information regarding good practice or areas of concern outside this focus were also noted.

Document review

The Trust shared current protocols, audit and information documents with the audit team prior to the visit. Documents were reviewed against the QSfPAS criteria if relevant, and also to identify areas to explore further during the visit, identify gaps and to inform recommendations. A checklist was used to collate information regarding protocols and guidelines, and is given in appendix D.

Findings

All staff were friendly and talked openly during the interviews and during clinic observation. Many of the Audiologists were understandably stressed and anxious, but remained professional throughout.

The findings from each element of the review are given summarised into the following themes;

- Departmental culture
- Education, Training and CPD
- Clinical competency and guidelines
- Management structure
- Quality assurance
- Compliments, complaints and concerns
- Newborn Hearing Screening

Departmental culture

All of the staff working in Paediatric Audiology, including those in assistant and administrative roles, reported it to be a very supportive and friendly team, where everyone is treated with respect and equally. Many highlighted how close the team felt, and some referred to it as their 'work family'. There has been very little turnover of staff, and reports of Audiologists being keen to join the team.

Staff report the time since receiving the ombudsman report as being very difficult. They do not understand what they have been doing wrong, and this has had a very negative impact. Staff have lost confidence in their clinical ability, constantly worrying that they are doing something wrong. The stress and anxiety this has caused has resulted in staff being quite emotional. However, the team reported how they have continued to support each other and 'pulled together' during these turbulent times.

Staff are proud of the service they provide and would rate it highly. Ratings were often based on the range of service provided, and that staff are constantly trying to evolve and develop services. Some staff mentioned that patient satisfaction surveys had been carried out in the past, and the audit against the Scottish Quality Standards (completed 2013 and 2017) was provided as examples of how the quality of the service was demonstrated. Everyone seemed very open to and willing to improve services. Only 2 staff identified areas needing improvement; one highlighted waiting times and one highlighted auditory brainstem response (ABR) testing.

Staff came across as hard working and prepared to go the extra mile for patients. They described their work as rewarding, and felt valued. All the clinical staff enjoyed the range of work they did. The department seemed very well organised, with clinical and non-clinical work (such as triaging referrals) being structured and having appropriate time allocated. Everyone seemed aware of their roles and responsibilities.

This high quality and hard working nature of the department was reiterated by the wider multidisciplinary team, to include Paediatrics, ENT and Speech and Language Therapy. In particular, their excellent communication, such as responsiveness to any questions or queries, opportunities for training and joint learning, and drive for a collaborative multidisciplinary approach to work was highlighted.

Staff meetings are held regularly every 4 – 6 weeks, with all Audiologists, Assistants and Administrative team members attending if it falls on a day they usually work. Some staff choose to come in for these meetings if it is on a day off. The meeting day is rotated to enable all staff to attend on a reasonably regular basis. These meetings are minuted and these are circulated for those who were not able to attend. There is also a clinical meeting at the end of each staff meeting that is not attended by the Administrative team, and focuses on clinical matters. All the Audiology

Team reported the Head of Department to be very supportive and approachable. They reported that they were comfortable to raise ideas or concerns with them, either on a 1:1 basis or during staff meetings.

There is a very strong multidisciplinary approach, with many joint clinics with paediatrics, ENT or both. This enables a seamless 'one stop shop' approach for children and their families, when more than one discipline is involved in managing the case. These clinics have been initiated by Audiology. All staff involved spoke favourably about the multidisciplinary clinics. There seemed to be a tendency for medical staff to take the lead in these clinics, and carry out some aspects which are more commonly carried out by Audiologists, such as giving the diagnosis of permanent childhood hearing impairment.

Education, training and CPD

All Audiologists hold Audiology theory qualifications at either under-graduate, graduate or post-graduate level. It was recognised that for the majority of these qualifications, practical training in paediatric audiology was very limited. The vast majority of staff did not work in paediatric audiology prior to working in the department and were trained in-house once they were in post. This in-house training followed a structured supportive approach with initial observation and slowly getting more involved in the clinics until confident to work independently. It was unclear how or if this inhouse training was recorded (such as a logbook completed) and there were no clinical competency assessments completed at the end of training by anyone from outside the department prior to working independently. Both Assistant Audiologists have been supported to complete basic training at Queen Margaret's University.

Staff reported completing a range of CPD events including courses, conferences, and more recently online courses and events. Although there is no specific training budget within Audiology, as long as courses are relevant to their needs, they were usually funded. All such funding requests go to the Head of Department for consideration. Training also occurs with the department, for example, from other specialities and hearing aid manufacturers. No staff have completed or even mentioned the post-graduate specialist training programmes, such as the Scientist Training Programme (see https://nshcs.hee.nhs.uk/programmes/stp/) or BAA Higher Training Scheme (see https://www.baaudiology.org/careers/hts/) which are aimed to give Audiologists the required skills and knowledge to work in more specialist clinical areas, and have an external final assessment of competence.

When questioned about keeping up to date with clinical practice there was no mention of a journal club and limited mentioning of journal articles / research literature. Few staff reported being members of one or both UK professional bodies / learned societies for Audiology; the British Society of Audiology and British Academy of Audiology, and hence have limited access to newsletters, webinars and the International Journal of Audiology.

None of the multidisciplinary team hold any qualifications in Audiology.

Clinical competency

Many elements of good practice were noted during clinical observation;

- Strong ethos of team work and collaboration during two tester and multidisciplinary clinics
- Excellent communication between audiologists in clinic
- Audiologists clearly patient focussed and family friendly in clinic
- Good test facilities and equipment, good set-up within rooms
- Well structured appointments
- Wide range of tests and assessments available, to include questionnaires, speech testing and objective testing
- Routine asking about sound sensitivity and advice giving

Examples of high quality service delivery were observed, which included the appropriate fitting of a CROS aid, management of a disruptive sibling during an assessment, and working with a child who has tinnitus. With regards to clinical and test procedures, Audiologists carried out a comprehensive range of tests, and the majority were carried out in accordance with recommended procedures. However, there were some areas of practice needing significant review. These are outlined individually, together with the clinical risk level which could lead to missed or delayed diagnosis of a permanent childhood hearing impairment. All elements identified where improvements could be made are included, although some more minor, such that any resultant training put in place has this as reference such that it can be comprehensive.

Visual Reinforcement Audiometry (VRA) (Very high risk)

This is one of the most common tests used in the 6 – 30 month developmental age range. No local technical guideline exists, but this is not necessary due to there being a national recommended procedure for the test. (British Society of Audiology, 2014). Testing was not carried out in line with the national guidelines.

1. The audiologists accepted a wide variety of what they felt were behavioural responses to sound, such as twitches and eye movements, as a true response to a sound stimuli. There was also significant comment from the Audiologists that the child was 'choosing' not to turn / respond. The national guidance and scientific basis of the test is to condition the child to turn their head to a sound stimuli using modified operant conditioning. If conditioned properly the child should turn unless the play in front of the child is too engrossing. This acceptance of a wide variety of behavioural responses to sound instead of only a clear head turn is likely to result in the child becoming unconditioned and confused such that further accurate testing is not possible without reconditioning the child, and lead to inaccurate test results being obtained. ***(Very high risk)***
2. There was a tendency for the play in front of the child to change / reduce when the sound stimuli was presented, which could act as a cue for the child that the reinforce toy was going to appear. The play in front of the child was typically at the eye level of the Audiologist as opposed to on the table top, resulting in the likelihood of more eye contact which could distract the child and the audiologist may also give subconscious cues. Stimuli were also observed to be presented when there was no play in front of the child (as the Audiologist was swapping toy). There didn't seem to be any consideration of letting the child play with toys themselves. Hence, the child could be responding to the change in play / eye movements rather than the sound stimuli, or inhibit responses due to eye contact. ***(Very high risk)***
3. The reward was presented as soon as the child made a head movement or a 'behavioural response', and not after a clear head turn had been completed. This does not give opportunity to distinguish between the child checking to see if the toys appear and / or other behavioural responses which may not be a true response to the sound stimuli. Hence the child could be rewarded by seeing the toys when they were not responding to the sound stimuli which may lead to the child being unconditioned, and / or false recording of responses. ***(Very high risk)***
4. There was a tendency for significant testing of the child's response around threshold which was not necessarily required. This could lead to the child loosing concentration and possible less accurate testing or having to bring the child back to complete testing. ***(Low risk if no. 1 is addressed)***
5. There were only one set of test toys. It may be necessary to change the 'game' the child is playing several times during testing to maintain their concentration and interest. This could lead to less accurate testing or having to bring the child back to complete testing. ***(Low risk if no. 1 is addressed)***

These issues are likely to result in conflicting test results between different appointments, and possibly concluding a child's hearing thresholds are better than they actually are. This could lead to the selection of inappropriate management, the need for ongoing hearing assessments and missed diagnosis of significant hearing loss.

Auditory Brainstem Response (ABR) testing (Very high risk)

This is the key test used for babies who do not pass their newborn hearing screen, and is used to diagnose significant hearing loss in the first few weeks of life so that it can be managed, e.g. with the provision of hearing aids. A significant body of research exists showing that if hearing aids are not fitted early (i.e. under 6 months of age) a child's language development may be atypical and / or delayed, and if permanent childhood hearing impairment is identified late, this may have a profound life-long impact on that child's communication and wider development.

ABR testing is not currently being carried out at Lothian so it was not observed. There is one member of staff who usually carries out ABR testing and whom has done so for many years, and another member of staff being trained up. It was reported during the interview stage that ABR testing was not being carried out according to national guidelines (British Society of Audiology, 2019), including not consistently carrying out bone conduction testing (which very recently has been exacerbated by faulty equipment which has not been addressed in a timely fashion), and not using agreed guidelines to decide if a response is present. ***(Very high risk)***

This is likely to result in inaccurate test results, which could lead to delayed or missed diagnosis of permanent childhood hearing impairment.

Speech testing (Moderate risk)

Speech testing is typically used to supplement / cross check hearing threshold results, as an outcomes measure for children with hearing aids, and as an alternative test for shy children or more complete cases.

1. All speech testing observed was carried out using live voice, and monitoring the level of this using a sound level metre placed on the table and not at the ear of the child. This could result in the child hearing the speech at a different level to that the Audiologist recorded the level to be. ***(Moderate risk)***

2. During the McCormick toy test, if the child did not know or vocalise the name of the toy, their knowledge of it was not routinely checked with the parent / carer. A leader phrase (e.g. "show me the...") was not always used. ***(Moderate risk)***

This could lead to inaccurate test results. As speech testing should not routinely be used as the sole test when assessing a child, this is rated as moderate risk.

Pure Tone Audiometry (Low risk)

This is a standard 'adult' hearing test which can be adapted for children from approximately 24 months of age by using 'games' for them to complete when they hear sounds.

1. In one case observed, masking was required to check ear specific thresholds for a bone conduction stimuli, and this was started without any instruction to the young person to 'ignore the wind', when the young person was of a developmental age when they could have understood this instruction. This resulted in a little confusion on the part of the patient, and although it did not affect the results for this case, for other cases the confusion may result in a loss of interest or understanding from the patient such that the testing may take longer or become less accurate. ***(Low risk)***
2. For some of the testing observed there was a tendency for significant testing of the child's response around threshold which was not necessarily required. This could lead to the child loosing concentration and possible less accurate testing or having to bring the child back to complete testing. ***(Low risk)***

Both of these are low risk and are unlikely to affect diagnosis, however, longer testing may limit what other tests could be completed within the session due to time limits or the patient's concentration limits, and may result in the need for additional appointments.

Test selection, result integration and critical review (Very high risk)

There was no clear guidance in protocols regarding how to select the most appropriate tests for the child's developmental age, and requirements of the assessment. Although in all clinics observed test selection was appropriate with regard to developmental age, for one case that was seen previously there was a suggestion that a test was used that was only suitable for those with a lower developmental age. If the test selected does not match the developmental age, responses are likely to be very variable, leading to a confusing picture of the child's hearing, which could lead to additional appointments and delayed diagnosis / management. ***(High risk, if all very high risks have been addressed)***

There was a lack of critical review of previous test results for children that were seen on more than one occasion, and a tendency to conclude that any changes in results were due to the child being difficult to test or could be explained by test variation. Cases are discussed, in particular across the multidisciplinary team however there was no evidence of critical reflection on test accuracy within and between these cases. There seemed to be some level of acceptance that there was a group of children who did show these variable responses from both Audiologists, and from the wider multidisciplinary team. There were a range of comments from members of the multidisciplinary team regarding variable or conflicting results. A critical review of the test technique and accuracy does not seem to have been considered, either within the Audiology team or by the wider multidisciplinary team. This lack of scientific approach and critical review of the findings over time could lead to additional appointments and delayed diagnosis / management. **(Very high risk)**

In routine assessment clinics there was a suggestion of over reliance on parental views of a child's hearing. There is a long standing evidence showing parental reports of hearing ability are not accurate, especially for milder hearing losses and in younger children (Watkin et al. 1990, Rosenfeld et al. 1998, Swierniak et al. 2021). There also seemed to be less consideration of reports from nursery and of speech / communication development, which can add to a clinical picture. When results are conflicting it is important to take into account the whole clinical picture, and weigh the evidence accordingly. Over-reliance on parental reports and not considering the full range of evidence could lead to additional appointments and delayed diagnosis / management. **(Very high risk)**

Whilst the introduction of more testing within clinics can have some advantages, there seemed to be a lack of thought as to the justification of carrying out an additional test, such that it seemed a 'test battery' approach. There may be justification to carry out a smaller number of tests to a high standard and gain enough information to appropriately manage the child in some cases. **(Low risk)**

Testing was described in a positive way as a "dark art" by one member of the multidisciplinary team and "amazing" by another. All audiological tests are scientific and technical; there were no comments regarding scientific accuracy and rigour.

(Re)Habilitation (High – Low risk)

Generally, this area of the service seemed to be well led, with a greater scientific approach. However, there seemed to be a reluctance to discuss the possible benefits and limitations of hearing aids for some losses. Two cases observed had significant hearing losses which they had for a number of years. One who had a significant mild loss was only just being aided despite significant concern from nursery and a lack of clarity in her speech. Another child with a ski-slope loss after 2 kHz was not aided, and there was just one comment from several years ago that it was "discussed how hearing aids would not help", but no trial seems to have ever been undertaken. The newborn hearing screening flow charts state that those with a mild loss up to 40 dB (dB scale not given) bilateral hearing loss would be followed up at 8 months, however, if a baby did have a bilateral sensorineural hearing loss in the 30 - 40 dBHL range, there is a growing body of evidence showing benefits of aiding young (Fitzpatrick et al 2015, Walker et

al. 2015, Ching et al. 2017). Not considering or trying aids in these patients may result in significant hearing problems and an impact on speech development, and / or potential litigation cases. ***(High risk***)

Earmould turn-around time was reported as typically 2 weeks. Although not included in the QSfPAS (NHS Scotland, 2016) it is recognised clinically, especially in babies and young children, that earmoulds should be replaced rapidly due to the reliance they may have on their aids and the detrimental effect poor fitting earmoulds can have on hearing aid use and sound quality. Standards state that earmoulds should be processed by manufacturers able to provide a 24 hour turn-around time (BSA, 2013) and should be received by the parents within five working days of the impressions being taken (MCHAS 2005, Department of Health 2008). ***(Low risk)***

Hearing aids are sometimes loaned to patients or use for trials. This practice should be reviewed in line with infection control guidance. ***(Low risk)***

Guidelines (Moderate risk)

There are a significant number of protocols, guidelines and clinic templates used by the Audiology Department, which are stored on the departmental shared drive, and accessible by all. Some of these have been written by members of the department or the multidisciplinary team, and some are copies of national or professional documents. Some are technical documents outlining how to do a particular test, where as others gave an overview of a clinic appointment, and others had pathways and referral routes. These documents are in varying formats and style, and vary significantly in content. The content is not necessarily obvious from the title of the document, and some content is repeated across two or more documents. References in guidelines were typically very limited, sometimes absent and those that were used were sometimes old and out of date. Guidelines did not routinely reference other guidelines, e.g. if a document summarising the content of an appointment mentioned a particular test, it did not then reference the test procedure that should be followed, such that all the documents seemed disjointed and unrelated. It was not clear how / if the plethora of national / professional guidance documents were used / followed.

Some key elements are not included in the guidelines, such as how a suitable test should be selected and how to decide on the management of inconclusive cases or those with conflicting test results. There are not technical guidelines to cover all tests, e.g. How to use Manchester Junior words. The majority off the documents did not include the name of the author, version numbers are not routinely used, and there were varying review periods. Findings from the review of locally produced guidelines are summarised in appendix D.

It was documented in some guidelines that “An audit of the Paediatric Audiology Service by the MRC Hearing and Communication Group, University of Manchester and commissioned by the Scottish Government took place in August 2007. This recommended that protocols and care pathways should be reviewed and documented.” No further information was given.

Most Audiologists reported being very familiar with the departmental guidelines, such that they don’t need to refer to them often. Staff gave a confusing picture as to who was responsible for reviewing the updating guidelines

Whilst it is good to see the department now has a wide range of guidelines in place, given the concerns found it is important that these are complete, and reviewed and updated regularly in line with the evidence base, using good document control. All staff need to be very familiar with the guidelines and the importance of following them. Permissible deviations from the guidelines should be clearly stated within the guideline. The guidelines can then for the basis of the quality assurance of clinical practice by peer review. **(Moderate risk)**

Management structure

Within Paediatric Audiology the Head of Service directly line manages the whole Audiology team, completing the majority of the operational and human resource management functions, as well as much of the decision making. The management of the Newborn Hearing Screening service has been delegated to the Screening / Diagnostic Lead, plus some financial aspects. This results in a high management workload for the Head of Department which could impact on ability to stay clinically active. No-one else within the department who was interviewed reported having any leadership or management training, or significant time allocated for management work, as such there is a significant gap in skills, knowledge and experience required to manage the department in the absence of the Head of Department, and Screening & Diagnostic Lead, which is the current situation. When the Head of Department is on leave, the majority of management actions are put on hold.

All Audiology staff have annual appraisals and development plans agreed, other than this annual meeting there are no other routine 1:1 meetings with their line manager, although meetings can be arranged ad hoc as required.

Originally there were three band 7 roles reporting into the Head of Audiology, a (Re)Habilitation Lead, Diagnostic Lead, and Screening Lead. The Habilitation Lead has become part-time, with no known backfill, such that her clinical role, which includes a significant amount of high quality multidisciplinary work, is difficult to fit into working hours. The Diagnostic and Screening Lead roles have been combined into one. Hence, there has been a significant reduction in band 7 Audiologists within the department over time. Staff at this level and above would typically be expected to provide management functions and scientific leadership within their clinical area, being educated at post graduate level or equivalent, which includes training in critical reflection and appraisal. In order to do this effectively, appropriate non-clinical time needs to be allocated to management and service development. Staff at lower grades would also benefit from involvement in the management of the department by being delegated specific work and responsibilities. Only one example of this was given, which was the forthcoming QSfPAS internal audit in 2022, when the Head of Service plans to delegate each of the different sections of the standards to different members of staff to collate information. In order for this to be carried out to an appropriate level staff need to be familiar with clinical audit and quality assurance principles.

Paediatric Audiology is considered a specialist area of audiology, and in order to lead clinics additional staff training is required, for example, completing the British Academy of Audiology Higher Training Scheme module(s) in paediatrics, or completion of the Scientist Training Programme. As a result, Paediatric Audiologists are considered to be at Healthcare Scientists Careers Framework (HSCF) level 6 and above. Therefore, they are typically paid at a minimum of AfC band 6, with those carrying out more complex work or seeing more complex patients which requires a significant amount of experience after postgraduate training in paediatric audiology, are usually a minimum of AfC band 7. Within the service at Lothian a number of staff are paid at AfC band 5 which is not in-line with their HSCF level.

The Head of Service reports into the Service Manager, who in turn reports into the Director. As would be expected, there is a certain amount of trust in these relationships that the clinical quality of the service is acceptable and any concerns to the contrary would be reported, as the Service manager and Director are not qualified Audiologists. The Director was aware of the audits against the quality standards in 2013 and 2017, and that the internal and peer review scores were similar on average, and was not aware of any specific concerns raised. The Head of Department reported having a good relationship with their line manager, having regular meetings and feeling supported and valued. The Head of Department reported making the Audiology Team aware of the managers she works with, mentioning them by name and occasionally managers visiting the department or attending staff meetings however, the Audiology Team reported very limited knowledge of the management team.

Clinical Audit

There appears to be no regular clinical audit programme within the department other than the review of all reports before going out of the department. These reviews look for spelling / grammar errors and are also to check management decisions. If any issues are found the individual completing the review would address this with the author however there did not seem to be any recording of these reviews nor monitoring to look for potential patterns between different clinics, patient types or Audiologists.

There have been two previous audits against national quality standards carried out by the department. The first used the first edition of the quality standards (NHS Scotland, 2009). There are a number of areas in which evidence was lacking to prove a quality standard was met. For example;

- The department stated that they were fully compliant with national test standards / guidelines at this point, which was agreed by the external peer reviewer, but no actual evidence documented to support this.
- The self assessment and peer review stated that staff in senior positions were trained to postgraduate level supplemented by suitably assessed practical experience in paediatric audiology, but no detail of what this 'suitably assessed practical experience' was recorded.

There are also other examples when the accuracy of scoring of compliance could be questioned. For example:

- The quality standards state that formal peer review of all procedures for all staff should be carried out at least every two years; the evidence given is that informal peer review is completed as staff work in pairs. Three criteria were scored as a group. The self assessment was scored five out of five which means "fully meets quality standard criteria". The external reviewer gave a score of four out of five which means 'Almost fully meets the quality standard criteria' despite there being no formal peer review process in place.

The quality standards were revised and updated and the second edition (NHS Scotland, 2016) required far more specific evidence to demonstrate compliance (e.g. case audits), and the department completed a re-audit in 2017. This involved a self assessment and then a desktop peer review of the scores given by external reviewers. The audit document provided for the BAA review only contains the scores against the criteria, and none of the supporting evidence. Where the score is less than fully compliant there is no statement to explain why. Of note, quality standard criteria 2.a.3 regarding following national standard / guidelines where these exist was scored a 4 (almost fully meets the criteria), yet the external assessors gave a 3 (meets around half the elements). For newborn hearing screening both the self assessment and external assessment gave a 4, which is not consistent with the reports given during the visit. A number of the criteria under section five, Skills and Expertise, were zero (no elements of the quality statement criteria are met (or not evident)), these are given below:

- 5a.4 Competency of staff performing all clinical procedures is verified by peer review or competency checks at least every 3 years. These are formally documented.
- 5a.5 NBHS Competency of staff performing neonatal assessment activity is verified by competency checks at least every 3 years. These are formally documented
- 5a.6 There is a Departmental process for dealing with the outcome of peer review observations, and concerns regarding clinical practice at any other time.
- 5a.8 All staff assisting audiologists demonstrate competence in the roles performed.

These scores on sections 2 and 5 when looked at together, i.e. not always following national standards and no peer review or processes for dealing with concerns about clinical practice, should have raised concerns and been addressed.

The next audit against these standards was reported by the Head of Service as planned to start in January 2022 across Scotland, with external peer review planned to start in January 2023.

When asked, Audiologists were not aware of any audit activity within the department currently, and gave the impression that this is not something there were particularly familiar with or had been involved in. When asked to rate the service the majority scored it highly (four or five out of five), but none used objective evidence to support this claim, e.g. by referencing quality standards and supporting audit work.

The newborn hearing screening specification outlines the QSfPAS which apply to the screening programme and who is responsible. The screening manager is also the diagnostic lead for the Paediatric Audiology service and carries out the majority of auditory brainstem response tests on babies who do not pass the screen. Although this will have benefits, such as a high level of knowledge and familiarity with both aspects, this is also a potential conflict of interest, if issues arise with one or more elements of the pathway.

There is regular review and reporting of waiting times and activity, and an annual report outlining the service, activity levels and caseload, however this annual report does not comment on trends in activity and caseload compared to previous years.

Compliments, complaints and concerns

Compliments are shared with the team and any cards displayed in the staff / administrative office. It was reported that patient satisfaction surveys have been carried out in the past however no evidence of this was provided.

There was a positive approach to receiving complaints, appreciating how they can be used to improve services. Staff gave examples of recent complaints. These included moving toys within clinical rooms, so they are out of sight and no longer tempting for children to touch, and improvements in Deaf awareness by adding a lipreading alert to Auditbase. Staff understood that it is best to try to resolve complaints quickly, and typically the Head of Service would contact patients to resolve issues. Issues highlighted as a result of complaints are often discussed at staff meetings. Staff said they don't get many complaints and that the case reviewed by the Scottish ombudsman 'came out of the blue', and they did not mention any other similar complaints having been received.

There was no evidence that trends in complaints were monitored either within the department or by management, nor complaints looked at from a departmental level to look for trends. It was reported that the Ombudsman report was not circulated to alert those in the wider multidisciplinary team of potential issues which may have highlighted other cases warranting a review to ensure management had been appropriate.

All Audiology staff reported that they felt confident to raise any concerns and that they were 'able to speak up'. Typically they would do so either at the staff meetings or directly with the Head of Service, and reported that they would be listened to.

There were conflicting reports of how any child protection concerns would be managed. All staff said they would let someone know if they had concerns, but whom they let know varied and there was little mention of the hospital child protection team.

Newborn Hearing Screening & screening team

The screening team are managed by a senior member of the Audiology team. They reported a marked difference in management and leadership from that described by those working within audiology which requires further investigation. This includes not having regular meetings, being less responsive to concerns raised and having not had appraisals for 2 – 3 years. The Newborn Hearing Screeners reported not feeling part of the Audiology Team but rather part of the ward team. Issues raised which are outside the scope of this report have been brought to the attention of the board.

Concerns were raised regarding the condition of some equipment, which is essential to the screening programme. Availability of some test equipment, such as longer leads, was restricted. These equipment issues could lead to

discontinuity of the screening service and / or higher referral rates, which could lead to delayed or missed diagnosis, and therefore should be considered a clinical risk.

Summary

The paediatric Audiology team are a hard working team, aiming to give a high quality and comprehensive service and are willing to learn and develop the service. There are many aspects of good practice as given below. The staff seem generally unaware of the issues with the current service found by this review. This review suggests the root cause of these issues are:

1. Inaccurate in-house training of staff with no external competency assessment of clinical skills resulting in tests being carried out incorrectly
2. A lack of sufficient scientific leadership, knowledge and enquiry. Had critical appraisal skills been used to continually reflect on the evidence base, guidelines, assessments, tests and results these issues should have been identified and action plans put in place and then monitored to ensure they were resolved promptly.
3. A lack of routine and robust quality assurance processes using hard evidence to assess quality and monitor the service.

Areas of good practice

Related quality standards are referenced.

- Strong ethos of team work and collaboration
- Audiologists: supportive of each other, friendly, approachable, all treated with respect, “a family”
- Regular team meetings incorporating service level information and clinical developments
- Team enjoy their work and “go the extra mile” for patients and families
- Excellent communication between audiologists in clinic, a collaborative approach in pre-school clinics
- Clear intent to continuously improve service
    - e.g. Support of ENT recovery, Introduction of standardised questionnaires
    - Evidence of service taking action to improve patient experience following complaints
- Well organised service
- Audiologists clearly patient focussed and family friendly in clinic
- Good facilities to include sound proofed booths (2a.8, 2a.9)
- Use of questionnaires as outcome measures (4d.1, 4d.2)
- Comprehensive range of services and test techniques available (2a.1,2a.2)
- Strong history of multi-disciplinary working (7a.1, 7a.2)
    - Open and responsive communication with other teams
    - Innovative multi-disciplinary clinics
    - Collaborative approach individual patient care
    - Audiology highly regarded by other specialities

Responses to specific questions asked by the board

Review of the diagnostic and testing process to include the training of staff and the regular review of competency, both in undertaking and interpreting tests

Many areas of good practice were observed in the diagnostic and testing process. However, there are significant issues with two key test procedures; Visual Reinforcement Audiometry and Auditory Brainstem Response testing. Both these tests are used widely and routinely when assessing babies and young children, with clear national guidance. However, this national guidance is not being followed. The inaccuracies suggest a lack of both scientific leadership, understanding of some of the fundamental scientific concepts and requirements of these tests, and the implications of carrying them out inaccurately. These issues could lead to inaccurate or delayed diagnosis, and should be considered as a very high clinical risk.

The majority of staff have never worked in any other paediatric audiology service, and received their specialist paediatric clinical training within the paediatric audiology department once they joined the department. This in-house training did not include any externally assessed clinical competency assessment. A number of staff carry out visual reinforcement audiometry, and none raised any concerns about the test methods used. The guidelines for carrying out this test have not significantly changed since its routine introduction in the NHS in the 1990s.

Currently there is one member of staff carrying out the majority of auditory brainstem response tests, and has done so for many years. The guidelines for this test have been reviewed and updated on a number of occasions since the introduction of newborn hearing screening to ensure testing is as accurate as possible to ensure good standards of testing. The latest standards came out in February 2019 (BSA, 2019), however, there were no significant changes with regard to the need to carry out bone conduction testing, or the main criteria used to decide if a response is present. Head of Service was aware national guidelines were not being followed consistently and had highlighted this, and asked for the guidelines to be followed.

There is no ongoing review of competency in undertaking and interpreting tests, such as peer review. Given the above findings it should be questioned whether there is the necessary expertise locally to do this accurately. Regarding the interpretation of tests there was recognition by many staff both within and external to the department, that there were children for whom conflicting results were obtained at different test sessions. This could be explained by the inaccuracies in testing found. However, there was no evidence that the accuracy of testing had been considered as a possible explanation for the test results. Nor did there seem to be a consideration of the physiological basis of the tests and their sensitivity and specificity, when interpreting conflicting or incomplete results. This lack of critical appraisal and scientific approach was seen in other areas, such as the 'test battery' approach to testing.

Review of the systems and processes supporting the discussions and actions after inconclusive test result, who is that communicated to and what discussion takes place.

Staff explained how complex cases could be discussed with Audiology colleagues or the wider multidisciplinary team. There are no written guidelines as to what to do in such cases. Typically cases are reviewed, and in a clinic with more senior staff and often multidisciplinary input, but there seemed to be no particular urgency to retest children in this situation. The lack of scientific enquiry and acceptance that results were found to change between test sessions for some children and that this was likely to be due to the child's behaviour or a progressive hearing loss, as opposed to inaccuracies as outlined above is of significant concern. It is recognised that some children are difficult to test, and their concentration can vary between test sessions, but these children should be comparatively few.

The need for accurate testing is core to assessing every child, however, if complex inaccuracies can easily confuse the clinical picture and together with a lack of critical appraisal of the results, this leads to very high clinical risk.

It should be acknowledged that it is only the Audiologists who hold qualifications in audiology, such that the wider multidisciplinary team are unlikely to be aware if testing is being done incorrectly.

What is the 'line of sight' about the provision of services and the governance aspects from the service to responsible director, is this fit for 21st century purpose?

As is often the case, there is significant trust between the Head of Service and Manager, and then Director, that the service is being provided to the correct standards and quality, as the management chain does not include anyone who is qualified in audiology and hence knowledgeable about the clinical details. The QSfPAS audit reports from 2013 and 2016 had been shared with the management, and these had raised no significant concern, but these reports are somewhat basic and do not include details of the evidence used. The combination of areas where scores were lower in 2017 (not always following national standards and a lack of peer review / actioning concerns about clinical issues) should be considered a red flag, and action plan written to investigate and resolve this.

As complaints to the department are not monitored by the board to look for patterns or trends, concerns of this nature are less likely to be highlighted.

The Manager and Director are reliant on the Head of Service having a high level of scientific enquiry and leadership, with skills and knowledge in critical appraisal, clinical practice and quality assurance, to be able to ensure leadership of a high quality clinical service. There needs to be clear expectations set around quality assurance to ensure this is robust and is used to regularly demonstrate the quality of the service to the Manager and Director. The Manager and Director need to ensure the results of any audits are considered carefully, and independently of the Head of Service, to ensure they are satisfied that the service is being delivered to the specified requirements. This review and findings suggest significant gaps in the current provision and set-up.

When and how often were clinical protocols in the department reviewed and by whom? What are the peer review processes within the between departments?

Clinical protocols exist, but vary significantly in format, style and content. Some, such as those used in hearing aid clinics, are more comprehensive. There are significant gaps in many for example, in clinical areas such as technical details and references, and from a document control perspective such as author, issue date and version numbers. This includes test selection and management of children with inconclusive or conflicting test results. Audiology staff reported they are reviewed and updated regularly. Despite the department having guidelines, there were examples of both national and local procedures not being followed. The lack of any references in some and limited / out of date references in others is of concern as full references should be expected to demonstrate the underpinning evidence base to the guidance and hence service provision.

There is no formal peer review of clinical competency either within or between departments. The only evidence of peer review shared with the reviewers was the desk-top peer review of the QSfPAS self-assessment, which was carried out by other Audiologists in Scotland. Issues regarding this audit have been detailed in the body of this report.

Summary of main areas of concern.

Related quality standards from QSfPAS (2016) are referenced where appropriate.

- Clinical competency (2a.3, 2a.4,2a.5, 2b.1,2b.2, 5a.2, 5a.3, 5a.8)
  - Two key assessment techniques are being carried out incorrectly, which could lead to inaccurate, conflicting and/or inconclusive hearing test results and result in delayed of missed diagnosis
  - Majority of current staff completed in-house paediatric training with no external competency assessment
  - Currently no regular review of competency nor peer review, other than checking of outgoing reports
  - Lack of scientific enquiry and critical appraisal with regard to reports from within audiology team and from other professionals of conflicting/changing test results for children. Cases discussed however no evidence of critical reflection on test accuracy within and between these cases

- Lack of scientific enquiry and critical appraisal
  - There is a lack of awareness that test guidance was not being followed and the implications of this
  - There is a lack of critical appraisal of individual patient presentation and test results which is required to appropriately manage cases, especially for complex patients or when test results are conflicting

- Incomplete clinical guidelines (1a.1, 1a.1, 1a.2, 2b.3, 4c.1)

- Quality assurance: (2a.5, 5a.4, 5a.5, 5a.6, 5a.7, 8a.5)

- No current quality monitoring plan for service
- No demonstration of recent clinical audits beyond patient satisfaction surveys
- Limited recognition of need to evaluate impact of service improvement
- No evidence of requirement for clinical quality to be demonstrated to relevant Director
- Conflicting reports of who is responsible for development and maintenance of protocols
- Clinical protocols not uniform in style/format/content

- Potential clinical risk linked to equipment/training for newborn hearing screening
  - Including ageing equipment and availability of spares
  - Could lead to issues with service continuity and accuracy of screen
  - Reported limited support for team

Recommendations

The following recommendations are made, and have been classed according to priority. Urgent and high priority recommendations are to address the immediate clinical risks. Medium priorities are those which are proposed to ensure robust quality assurance such that incidents like this do not reoccur.

Urgent - to address immediately

1. Mitigation strategy updated in light of findings (completed 8th October 2021)
2. Onsite Visual Reinforcement Audiometry training session covering test technique with case studies incorporated for illustration
3. Commence ABR training for appropriate staff (minimum 2 staff) with external support provided (including mentorship and supportive peer review). Consider enrolment onto BAA Higher Training Scheme module in Paediatric Assessment (newborn) to enable staff to obtain recognised qualification which includes externally assessed clinical competency. Consider having two staff working jointly in ABR clinics for peer support, joint learning and to build confidence.
4. Ensure there are adequate toys available to use during behavioural testing meeting current Health and Safety guidance
5. Ensure there is adequate functioning equipment and spares for the Newborn Hearing Screening Programme

High - within 12 weeks

6. Share the findings of this review within the multidisciplinary team to ensure clinicians are aware that there may be children within their caseloads who may have been tested inaccurately, and the need to review the full clinical picture, so that repeat testing can be arranged as needed.
7. Protocols / guidelines to be reviewed, consolidated where appropriate, and updated using full referencing, using version numbers to facilitate document control. New protocols written if they don't currently exist or adopt and amend guidelines from other departments to reduce workload. All clinical staff to receive training in all protocols to ensure they are understood and the importance of following them is highlighted.
8. Theoretical and practical training for all staff covering:
    a. The importance of following protocols and guidelines
    b. Review of the evidence base to include:
        i. Accuracy of parental reports of hearing ability
        ii. Test techniques to include scientific rational and understanding of child development
        iii. Effects of mild and high frequency ski slope losses
        iv. The impact of delayed diagnosis of permanent childhood hearing impairment
    c. Test techniques
    d. Test selection
    e. Result integration and critical review
    f. Management of inconclusive and complex patients
9. Arrange clinical mentorship and support for Audiologists to consolidate good practice
10. Consider enrolling key staff on BAA Higher training scheme module in Paediatric assessment (6mths +) to enable staff to obtain recognised qualification which includes externally assessed clinical competency and critical appraisal skills.
11. Develop an external regular and ongoing peer review system for ABR traces in line with recommendations
12. Ensure all staff are familiar with the correct child protection reporting procedures, and recognise when concerns should be highlighted, including some children who fail to attend.
13. Review management of the Newborn Hearing Screening Team to ensure the team are supported as needed

Medium - within 6 months

14. Develop a comprehensive quality assurance programme for the clinical aspects of the service, to include peer review, and reporting / oversight mechanism to Director. Suitable peer reviewer to be identified, which may be external.
15. Review structure of department to ensure:
    a. Adequate senior staffing with the appropriate scientific approach and critical appraisal skills in each of the three areas: screening, diagnostic assessment and habilitation, to enable appropriate service development and leadership
    b. Adequate senior staffing to enable more management functions to be delegated to ensure robust leadership and management in the absence of the Head of Service.
    c. Staff grading is reflective of the specialist roles and training
16. Further training for staff in:
    a. Clinical audit so they are able to support the quality assurance programme, and recognise the importance and benefits of accurate self assessment
    b. Critical appraisal and reflection, such that in the future issues should be identified and acted upon earlier
17. Review complaint management processes to consider:
    a. Regular recording of all complaints received by the Paediatric Audiology Department , to include informal complaints
    b. Monitoring of complaints at departmental level to look for patterns and themes, and agreeing appropriate action plans
18. Review use of aids for trials and as loan aids in line with infection control guidance
19. Consideration given to sending staff to observe other large paediatric audiology departments, with priority given to those with clear scientific leadership

As stated previously, there are many areas of good practice within the service. The team are hard working and strive to give a good service to patients and their families. If the recommendations are implemented successfully, the service should be of good quality, and with good leadership, has the potential to be a centre of excellence in paediatric audiology.

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Appendix A - QSfPAS criteria and details relevant to the review.

A number of the quality standards are relevant to the review, however, require specific audits to be carried out or other evidence to be provided, which was outside the scope of the current review. In addition, clinical observation was limited. Therefore, it was not possible to complete an audit against these standards, but rather to use this as a framework with regard to expectations.

Some of the quality standards relate to services which would not typically be lead by the Paediatric Audiology Service, or involve a multidisciplinary approach some of which may be outside the control of Paediatric Audiology. Some of the standards are related to the scope of this review, but are not central, such as waiting times. These, are indicated in the tables using a colour code as follows:

Central to current review

Related to current review but not central to it, for example waiting times and operational aspects

Services typically lead by others, for example, paediatricians

Multidisciplinary services

For the standard statements and rational, please see https://learn.nes.nhs.scot/9521/scottish-government-health-and-social-care-resources/scottish-access-collaborative-making-connections-for-staff-and-patients/specialty-network-pages/ent-specialty-group-home-page/ent-documents/quality-standards-for-paediatric-audiology-services-scotland-v2.

Criteria		Example evidence as given in QS	Scope of review				Relevance
no	statement		Review of the diagnostic and testing process	Review of the systems and processes supporting the discussions and actions after inconclusive test result	What is the 'line of sight' about the provision of services and the governance aspects	When and how often were clinical protocols in the department reviewed What are the peer review processes	
1a.1	Clearly defined written referral pathways from all referral sources are in place, reviewed at least every three years, and disseminated to all potential referrers on a regular basis.	Written referral pathways, linked to referral criteria, for all referral routes for all ages of children. Pathways should include timings of appointments (urgent/routine) and request for referrers to detail any communication support requirements for the child/family. Version numbers to be included, and documents to be updated at least every 3 years, or sooner should changes occur. Written/electronic document for referrers detailing referral pathways and criteria. Evidence that pathways have been disseminated to/discussed with referrers e.g. email/Agenda for GP training/presentation.				Yes - should have written protocols as detailed and evidence of dissemination	
1a.2	Where local services are unable to provide all aspects of care, clear referral routes to external providers are in place.	Written referral pathways, with details as 1a.1.	Yes - depends on skills and knowledge of staff as to when they should refer on	Yes - if inconsistent this may warrant a referral elsewhere			
1a.3	Routine new referrals, for hearing assessment, are offered an appointment within 6 weeks of receipt of referral.	Written policy on waiting times. Audit of waiting times, against 6 week target, every 3 months (or as per Government Directive). Data taken as a 'snapshot' of activity on a particular day. Should include all new cases in one clinic, for each separate list/clinic location e.g. School age list and pre-school list at clinic A and clinic B. Monthly returns to Information Services Division					
1a.4	Urgent new referrals, for hearing assessment, are offered an appointment within 4 weeks of receipt of referral. Urgent cases are specified as: ≤6 months of age with parental concern; meningitis; plus any others deemed urgent by the service. Medical emergencies fall outside of the scope of these Standards.	Written policy on waiting times. Audit of waiting times, against 4 week target, every 3 months (or as per Government Directive). Data taken as a 'snapshot' of activity on a particular day.					
1a.5	Children requiring follow-up hearing assessment/hearing aid reviews are offered appointments within an identified timescale.	Audit of planned review date against actual review date. ≥80% seen within one month of scheduled appointment. Audit should cover 10 cases for each separate list/clinic location e.g. School age list, preschool, hearing aid review at clinic A and clinic B.					
1a.5	Children requiring follow-up hearing assessment/hearing aid reviews are offered appointments within an identified timescale.	Audit of planned review date against actual review date. ≥80% seen within one month of scheduled appointment. Audit should cover 10 cases for each separate list/clinic location e.g. School age list, preschool, hearing aid review at clinic A and clinic B.	Yes - test interpretation to include when child should be reviewed	Yes - actions to be taken if inconclusive re review times		Yes - protocols should include review periods for different scenarios	
1a.6	NBHS Referrals from NBHS for diagnostic assessment are offered an appointment within the nationally agreed timescales	Monthly Reports based on Newborn Hearing Screening – Timely Assessment of Screen Referrals Indicator3				Yes - should be within protocols	
1a.7	Flexibility is available in appointment times, and where possible locations, to suit the individual needs and preferences of the parents and child or young person	List of clinic locations. Clinic schedule from electronic records to show range appointment times/days available. Demonstration of flexibility, e.g. partial booking/letters.					
1a.8	NBHS Flexibility is available in appointment times, and where possible locations, to suit the individual needs and preferences of the family.	Information on availability and flexibility of appointments for diagnostic assessment following referral from NBHS.					
1a.9	Robust systems are in place, used and regularly reviewed, to manage the transition from child to adult audiology services.	Transition Protocol. Information sheets. Letters/or evidence of referral from paediatric audiology to adult/transition service.				Yes - should have protocol	
1b.1	The number of incorrect referrals to audiology is monitored annually, and action continuously taken to address any non-	Examples of incorrect referrals. Evidence from triage service. Action taken where non-compliance exists.					

	compliance with referral criteria.						
Criteria		**Example evidence as given in QS**	**Scope of review**				**Relevance**
no	**statement**		**Review of the diagnostic and testing process**	**Review of the systems and processes supporting the discussions and actions after inconclusive test result**	**What is the 'line of sight' about the provision of services and the governance aspects**	**When and how often were clinical protocols in the department reviewed What are the peer review processes**	
1b.2	Key data are identified, collected, reviewed and used in annual service review.	A Report Detailing: • the number of children referred to audiology services, with specific reference to the numbers referred by NBHS • the number of young people transferring to adult services • the number of appointments not attended and non-responders from partial booking (if used) • the number of NHS hearing aids fitted for the local paediatric population, including conductive 15 and sensorineural losses, with specific reference to those children referred by NBHS • subsequent reports monitor trends over time					
2a.1	A comprehensive range of audiological assessments is available, either in the local audiology department or by a prearranged referral pathway with an alternative service.	List of assessments available. Two cases studies demonstrating the spectrum of assessments undertaken (can be linked with 2b.1.)	Yes - staff need to be competent in selecting appropriate tests	Yes - need to be able to recognise when inconclusive is due to test / technique, or due to child		Yes - should be clearly documented how this is done within protocols	
2a.2	NBHS A comprehensive range of audiological assessments is available.	Three cases of newborns with hearing loss	Yes - as for 2a.1	Yes - as for 2a.1		Yes, as for 2a.1	
2a.2	NBHS A comprehensive range of audiological assessments is available.	Three cases of newborns with hearing loss	Yes - as for 2a.1	Yes - as for 2a.1		Yes - as for 2a.1	
2a.3	All audiological procedures follow national standard/guidelines where these exist.	Access to National Standards/Guidelines either electronically, or via hard copy, within Department. Local protocols for activity outside the scope of the above.	Yes - are national guidelines followed, what guidelines are used when there are no national ones?	Yes - should be included in protocols		Yes - clear protocols referencing national protocols as required	
2a.4	NBHS All audiological procedures follow national standard/guidelines where these exist.	Access to National Standards/Guidelines either electronically, or via hard copy, within Department.	Yes - are national guidelines followed, what guidelines are used when there are no national ones?	Yes - should be included in protocols		Yes - clear protocols referencing national protocols as required	
2a.5	NBHS Where a system of national/regional peer review is in place for NBHS diagnostic assessments, participation is demonstrated and is monitored locally. If there is no system of national peer review in place for NBHS diagnostic assessments then departments must demonstrate that local peer review is taking place and that this is being monitored.	Evidence of meeting peer review protocol	Yes - evidence of peer review and by suitable person	Yes - should be included in peer review	Yes - audits could be reported to Director	Yes - there should be a protocol outlining peer review	
2a.6	All equipment is calibrated at least annually and documented to international standards	List of equipment with calibration dates/log. Current calibration certificates	Yes - part of clinical competence		Yes - Audit / summary could be reported	Yes - should be included in protocols	
2a.7	Daily checks are carried out and documented, across all sites	Log of Stage A checks for all equipment available. Audit of Stage A checks for all equipment over 4 week period, twice in year prior to audit. 4 = 100%, 3 = 90 -99%, 2 = 80 -89%, 1 = 75 -79%, 0=	Yes - part of clinical competence		Yes - Audit / summary could be reported	Yes - should be included in protocols	
2a.8	Hearing tests via headphones/insert earphones/bone conduction are always carried out in acoustical conditions conforming to national and international standards 5.	Results of acoustic testing to demonstrate compliance with the acoustic requirement available for all facilities used for hearing assessment. Such ambient noise level measurements shall be made at a time when conditions are representative of those existing when audiometric tests are carried out, including operation of the air - conditioning/ heating system and lighting. 4 =	Yes - part of clinical competence			Yes - should be included in protocols	

		100%, 3 = 90 -99%, 2 = 80 -89%, 1 = 75 -79%, 0= <75%					
Criteria		**Example evidence as given in QS**	**Scope of review**				**Relevance**
no	statement		**Review of the diagnostic and testing process**	**Review of the systems and processes supporting the discussions and actions after inconclusive test result**	**What is the 'line of sight' about the provision of services and the governance aspects**	**When and how often were clinical protocols in the department reviewed What are the peer review processes**	
2a.9	Hearing tests performed in the sound field are always carried out in acoustical conditions conforming to national and international standards	Results of acoustic testing to demonstrate compliance with the acoustic requirement available for all facilities used for hearing assessment. Such ambient noise level measurements shall be made at a time when conditions are representative of those existing when 5 See Appendix 2 19 audiometric tests are carried out, including operation of the air conditioning/ heating system and lighting. 4 = 100%, 3 = 90-99%, 2 = 80-89%, 1 = 75-79%, 0= <75%	Yes - part of clinical competence			Yes - should be included in protocols	
2b.1	All assessments are interpreted taking into account the developmental status of the child and any co-existing medical conditions.	Two case studies (can be the same as those used in 2a.1.)	Yes - key aspects of competency	Yes - key aspect of competency		Yes - should be included in protocols	
2b.2	NBHS All assessments are interpreted taking into account the developmental status of the child and any co-existing medical conditions	Three cases of newborns with hearing loss	Yes - key aspects of competency	Yes - key aspect of competency		Yes - should be included in protocols	
2b.3	Written local protocols exist which define appropriate management options arising from the assessment (such as decisions to refer, review or discharge).	Protocols/Care pathways Two case studies (can be the same as those used in 2a.1./2.b.1)	Yes - need to be very familiar with appropriate management options	Yes - need to be very familiar with appropriate management options		Yes - should be included in protocols	
3a.1	The IMP includes an initial programme of audiological management (including provision of hearing aids where appropriate) and details of ongoing assessment as required.	Audit of 20 cases	Yes - competent at writing IMPS	Yes - appropriate IMPS when inconclusive		Yes - should be in protocols	
3a.2	NBHS The IMP includes an initial programme of audiological management (including provision of hearing aids where appropriate) and details of ongoing assessment as required.	To include IMP on completion of assessment for three babies identified with hearing loss following referral by NBHS	Yes - competent at writing IMPS	Yes - appropriate IMPS when inconclusive		Yes - should be in protocols	
3a.3	The IMP includes, where appropriate, service provision from those currently involved with the child and family.	Audit of 20 cases	Yes - competent at writing IMPS	Yes - appropriate IMPS when inconclusive		Yes - should be in protocols	
3a.4	The IMP details any requirements families have for information, family support and practical advice.	Audit of 20 cases	Yes - competent at writing IMPS	Yes - appropriate IMPS when inconclusive		Yes - should be in protocols	
3a.5	Any agreed needs are documented in the IMP and reviewed at subsequent appointments.	Audit of 20 cases	Yes - include reviewing IMP at follow-up	Yes - include reviewing IMP at follow-up		Yes - should be in protocols	
3a.6	The IMP is circulated to parents, and members of the multi-agency team where appropriate, with the consent of the family.	Audit of 20 cases	Yes - staff should be aware	Yes - staff should be aware		Yes - should be in protocols	
3a.7	The IMP follows the young person through transition and is available to the adult service	Provision of copies of IMP for all Transition Cases during audit year	Yes - staff should be aware	Yes - staff should be aware		Yes - should be in protocols	
4a.1	All referrals for hearing aids are offered an appointment for fitting within 4 weeks of decision to aid, with the exception of mild, unilateral and temporary conductive hearing losses, where appointments can be offered within 6 weeks of decision to aid.	Audit of time between decision to aid and fitting of aid against 4/6 week target Data should cover 20 cases and include at least 5 cases of sensorineural loss	Yes - part of ability to manage cases		Yes - audits could be reported to Director	Yes - should be in protocols	
4a.2	NBHS All referrals for hearing aids for babies identified via NBHS, are offered an appointment for fitting within 4 weeks of decision to aid.	Audit of all babies identified via NBHS during audit year	Yes - part of ability to manage cases		Yes - audits could be reported to Director	Yes - should be in protocols	
4a.3	Appointments for replacement earmoulds are within 2 working days of request, in at least one site in the area, unless delayed at young person/family request.	Audit of time from request to appointment offered against 2 day target. Data to cover range of ages, including under 2s. Audit should cover 20 cases and 23 include 5 children under 2 years of age					
4a.4	Appointments for hearing aid repair are within 2 working days of request, in at least one site in the area, unless delayed at young person/family request	Audit time from request to appointment offered against 2 day target Data to cover range of ages, including under 2s Audit should cover 20 cases and include 5 children under 2 years of age					
4a.5	Services offer the option of drop off/postal repairs.	Information leaflet/Departmental literature					

4a.6	Children and families are offered regular reviews, appropriate to their age and hearing loss.	Audit of frequency of reviews for children of different ages with a range of hearing losses. Audits should cover a range of hearing losses: 5 cases 5 years	Yes - part of ability to manage cases		Yes - audits could be reported to Director	Yes - should be in protocols	
Criteria		**Example evidence as given in QS**	**Scope of review**				**relevance**
no	statement		**Review of the diagnostic and testing process**	**Review of the systems and processes supporting the discussions and actions after inconclusive test result**	**What is the 'line of sight' about the provision of services and the governance aspects**	**When and how often were clinical protocols in the department reviewed What are the peer review processes**	
4b.1	The type of amplification, and features employed, are selected based on the individual child's needs	4 case studies detailing features and type of aids to include: One child under 1 year of age One primary age child One secondary age child/transition case One case, where possible, with nonconventional aid e.g. Bone conduction softband/ITE	Yes - part of ability to manage cases		Yes - case studies could be reported to Director	Yes - should be in protocols	
4b.2	The Department signposts children and families to environmental/assistive listening devices.	Information available in Department. Case studies showing information given/signposted to families	Yes - part of ability to manage cases		Yes - case studies could be reported to Director	Yes - should be in protocols	
4c.1	Local protocols which comply with the latest professional bodies' and national guidance are in operation concerning selection, fitting and verification of hearing aids.	Protocols				Yes	
4c.2	Verification of hearing aid performance is carried out using Real Ear Measurement (REM) or coupler measurement (measured/predicted Real Ear to Coupler Difference) unless clinically contraindicated for individual children	Audit to ensure use of REM/RECD to verify all hearing aid fittings. 20 cases which should include all children under 2 years of age with initial fitting during audit year	Yes - part of ability to manage cases		Yes - audit could be reported to Director	Yes - should be in protocols	
4c.3	Where REM/RECD is performed, measurements are made according to BSA/BAA recommended procedure.	Audit to ensure compliance to BSA/BAA protocols 20 cases which should include all children under 2 years of age with initial fitting during audit year	Yes - part of ability to manage cases		Yes - audit could be reported to Director	Yes - should be in protocols	
4c.4	Where REM/RECD measurements are performed, responses fall within recommended target tolerances, unless clinically contraindicated for individual children.	Audit to ensure compliance to BSA/BAA protocols 20 cases which should include all children under 2 years of age with initial fitting during audit year	Yes - part of ability to manage cases		Yes - audit could be reported to Director	Yes - should be in protocols	
4c.4	Where REM/RECD measurements are performed, responses fall within recommended target tolerances, unless clinically contraindicated for individual children.	Audit to ensure compliance to BSA/BAA protocols 20 cases which should include all children under 2 years of age with initial fitting during audit year	Yes - part of ability to manage cases		Yes - audit could be reported to Director	Yes - should be in protocols	
4c.5	When REM/RECD is not attempted, completed or is contraindicated, an explanation is recorded in the IMP	Audit 20 cases which should include all children under 2 years of age with initial fitting during audit year	Yes - part of ability to manage cases	Yes - if not completed or inconclusive	Yes - audit could be reported to Director	Yes - should be in protocols	
4d.1	A range of outcome measures are available to, and used by, the service	List of outcome measures used by service	Yes - need to recognised need for a range of measures	Yes - if inconclusive		Yes - should be in protocols	
4d.2	Outcome measures are appropriately used to evaluate hearing aid fitting, and to guide further management.	2 Case studies/IMPs covering a range of evaluation tools, and identifying the effect on further management	Yes - need to be able to select appropriate measures as part of testing, and interpret	Yes - if inconclusive			
5a.1	All eligible, clinical staff working in Audiology are registered with a registration body	List of all staff including temporary, part time and locum Registration numbers Reasons for not registering	Yes - as then must follow CPD, conduct and performance standards	Yes - as must follow standards		Yes - should be in protocols re: who can test	
5a.2	Staff in senior positions (Bands 7/8) are trained to post-graduate level or have significant practical experience in paediatric audiology.	List of qualifications for all staff/documented experience	Yes - as would be staff 'turned to' for more challenging cases and for training	Yes - as would be staff 'turned to' for more challenging cases and for training	Yes - Director needs to be aware of required competencies to work at each level	Yes - as need to able to write and review protocols	
5a.3	NBHS Audiology staff carrying out neonatal assessments should have appropriate qualifications and training/experience for newborn/early years work.	List of qualifications/training/experience for newborn/early years work	Yes - directly relates to competency	Yes - directly relates to competency	Yes - Director needs to be aware of required competencies to work at each level	Yes - should be in protocols	
5a.4	Competency of staff performing all clinical procedures is verified by peer review or competency checks at least every 3 years. These are formally documented.	Local procedure/process for peer review Peer review checklist for all procedures and/or appointment types, includes information given on results at time of appointment List of details/dates of completed peer reviews	Yes - however peer reviewer and method used is key	Yes - as should include inconclusive cases	Yes - audit could be reported to Director	Yes - should be in protocols	
5a.5	NBHS Competency of staff performing neonatal assessment activity is verified by competency checks at least every 3	Local procedure/process for competency checks Checklist for all procedures (multiple frequency tone pip air conduction, 4 kHz bone conduction, cochlear	Yes - however peer reviewer and method used is key	Yes - as should include inconclusive cases	Yes - audit could be reported to Director	Yes - should be in protocols	

	years. These are formally documented.	microphonic and high frequency tympanometry) Includes information given on results at time of appointment					
Criteria		**Example evidence as given in QS**	**Scope of review**				**Relevance**
no	statement		**Review of the diagnostic and testing process**	**Review of the systems and processes supporting the discussions and actions after inconclusive test result**	**What is the 'line of sight' about the provision of services and the governance aspects**	**When and how often were clinical protocols in the department reviewed What are the peer review processes**	
5a.6	There is a Departmental process for dealing with the outcome of peer review observations, and concerns regarding clinical practice at any other time.	Departmental policy. Local procedure/process for peer review includes dealing with findings. Action plans in place, linked to peer review observations, if necessary.			Yes - should be reported to Director and plan of action agreed	Yes - should be in protocols	
5a.7	NBHS There is a Departmental process for acting on the outcomes of peer review of assessment.	Departmental policy for dealing with outcomes of NBHS assessments. Local procedure/process for peer review includes dealing with findings. Action plans in place, linked to peer review observations, if necessary.			Yes - should be reported to Director and plan of action agreed	Yes - should be in protocols	
5a.8	All staff assisting audiologists demonstrate competence in the roles performed.	Competency checks	Yes - however peer reviewer and method used is key		Yes - audit could be reported to Director	Yes - should be in protocols	
5a.9	All clinical staff participate in relevant CPD activity in line with professional guidance.	Local systems for ensuring staff attend and record CPD Discussions with staff during external audit visit	Yes - to enable skills to be maintained and new evidence used	Yes - to enable skills to be maintained and new evidence used	Yes - summary could be reported to Director	Yes - should be in protocols, appraisals and dept. plan	
5a.10	All Audiologists have regular training, and annual updates on, advances in paediatric audiology, hearing aid technology and assistive listening devices.	Record of training and attendance	Yes - to enable skills to be maintained and new evidence used	Yes - to enable skills to be maintained and new evidence used	Yes - summary could be reported to Director	Yes - should be in protocols, appraisals and dept. plan	
5a.11	NBHS All Audiologists performing neonatal assessments participate in relevant CPD activity, including regular training and annual updates specific to NBHS.	Record of training and attendance at meetings	Yes - to enable skills to be maintained and new evidence used	Yes - to enable skills to be maintained and new evidence used	Yes - summary could be reported to Director	Yes - should be in protocols, appraisals and dept. plan	
5a.12	All staff employed within Audiology are deaf aware	Staff training records (Deaf awareness training at Induction and then at least every 5 years). Evidence from complaints/satisfaction surveys with regards to deaf awareness, if arisen. Written policies. Staff CPD records	Yes - to enable skills & knowledge to be maintained			Yes - should be in protocols, appraisals and dept. plan	
6a.1	Written information regarding the audiology appointment (directions or maps, parking facilities, appointment duration, procedures, facilities, desirable baby state) is provided as part of the appointment process.	Sample appointment letters Community and Hospital Additional sources of information e.g. Website, appointment cards					
6a.2	NBHS NBHS specific letter is provided as part of the appointment process	Sample NBHS appointment letters.					
6a.3	Families are provided with appropriate methods to contact departments including phone numbers and either text or email.	Sample appointment letters Community and Hospital Additional sources of information e.g. Website, appointment cards					
6a.4	Children, young people and families receive verbal explanation of the audiological assessment results, and supporting literature if required, on the same day that the assessment is carried out.	Documentation in Journal/IMP of test results/explanation Protocol including statement that verbal results are given on day Can also be included in Competency check	Yes - part of ability to manage cases	Yes - if not completed or inconclusive	Yes - as included in competency check	Yes - should be in protocols	
6a.5	NBHS Families receive verbal explanation of the neonatal hearing assessment results, and supporting literature, if required, on the same day that the assessment is carried out	Results Record Sheets/Journal Entries/Letters	Yes - part of ability to manage cases	Yes - if not completed or inconclusive	Yes - as included in competency check	Yes - should be in protocols	
6a.6	Children, young people and families are offered written information following appointments within 10 working days of the appointment	Audit of letters/IMPs of time from appointment to distribution against 10 working day target 20 cases	Yes - part of ability to manage cases	Yes - if not completed or inconclusive	Yes - audit could be reported	Yes - should be in protocols	
6a.7	NBHS Following completion of newborn hearing assessment,	Audit of 5 letters/reports against 10 working day target, on completion of NBHS	Yes - part of ability to	Yes - if not completed or	Yes - audit could be	Yes - should be in protocols	

	families are offered written information within 10 working days of the appointment.	assessment (all cases where not 'normal discharged').	manage cases	inconclusive	reported		
Criteria		**Example evidence as given in QS**	**Scope of review**				Relevance
no	statement		**Review of the diagnostic and testing process**	**Review of the systems and processes supporting the discussions and actions after inconclusive test result**	**What is the 'line of sight' about the provision of services and the governance aspects**	**When and how often were clinical protocols in the department reviewed What are the peer review processes**	
6a.8	Children, young people and families areroutinely given information on support services (when appropriate) to include educational sensory service as well as local and national voluntary support groups for deaf children and young people.	4 IMPs or Case Studies to demonstrate information given.	Yes - part of ability to manage cases	Yes - as particularly important if inconclusive	Yes - case studies could be reported	Yes - should be in protocols	
6a.9	NBHS Families of babies identified with a hearing loss through NBHS are routinely given information on support services (when appropriate) to include educational sensory service as well as local and national voluntary support groups for deaf children and young people	Examples of 3 letters/reports on completion of NBHS assessment	Yes - part of ability to manage cases	Yes - as particularly important if inconclusive	Yes - case studies could be reported	Yes - should be in protocols	
6a.10	Children, young people and families have access to information in their preferred language via the provision of translated material where possible.	Interpreter policy Evidence of use of interpreters, where required, e.g. IMPs/Journal/Invoices Evidence of access to information leaflets in other languages	Yes - part of ability to manage cases			Yes - should be in protocols	
6a.11	NBHS Families of babies referred by NBHS have access to information in their preferred language via the provision of translated material where possible	Interpreter policy Evidence of interpreters used for neonatal assessment, where required, e.g. invoice, letter documenting interpreter present. Local policy/process for identifying families requiring interpreter support and arranging this.	Yes - part of ability to manage cases			Yes - should be in protocols	
6a.12	Information is provided to young people on the transition process and future service provision.	Departmental policy Examples of information provided to young person	Yes - part of ability to manage cases			Yes - should be in protocols	
7a.1	Each audiology service works within a team of professionals with expertise in: • paediatric audiology • development of language and speech skills • medical aspects of audiology • child development and family support • educational support Primary care	List of members of collaborative team	Yes - part of ability to manage cases	Yes - particularly important for inconclusive cases		Yes - should be in protocols	
7a.2	The multi-agency team, with child and parents or young person as central members, includes or has access to: • education services (in particular teacher of the deaf) specialist speech and language therapy • paediatric otology • paediatric medicine • genetics • Cochlear Implant services • vision care • social work services • voluntary agencies • educational psychology services • Child and Adolescent Mental Health Services (CAMHS)	Evidence of referral to other specialist services	Yes - part of ability to manage cases	Yes - particularly important for inconclusive cases		Yes - should be in protocols	
7a.3	Each collaborative team has defined written roles	Local protocol Evidence of regular collaborative team meetings/appointments with families e.g. Planner	Yes - need awareness of roles to agree on management / onward referrals etc.	Yes - particularly important for inconclusive cases		Yes - should be in protocols	
7b.1	Results of audiological assessments are reported to the referrer and any other relevant professionals	Examples of reports/letters/IMP	Yes - part of ability to manage cases	Yes - particularly important for inconclusive cases		Yes - should be in protocols	
7b.2	NBHS Results of neonatal hearing assessments are reported to the referrer and other relevant professionals	Examples of reports/letters/IMP	Yes - part of ability to manage cases	Yes - particularly important for inconclusive cases		Yes - should be in protocols	
7b.3	Reports are distributed to relevant professionals within 10 working days of the assessment.	Audit against 10 day target for distribution 20 cases	Yes - part of ability to manage cases			Yes - should be in protocols	
7b.4	NBHS Reports are distributed to relevant professionals within 10 working days of completion of the neonatal hearing assessment	Audit against 10 day target for distribution	Yes - part of ability to manage cases		Yes - audit could be reported to Director	Yes - should be in protocols	

7b.5	Non attendance is reported to the referrer, parent, and appropriate professionals e.g. GP, HV, Child Health, in accordance with local guidelines/protocols	Local protocol Audit of DNAs and to whom reports are distributed 20 cases	Yes - part of ability to manage cases	Yes - particularly important for inconclusive cases	Yes - audit could be reported to Director	Yes - should be in protocols	
Criteria		**Example evidence as given in QS**	**Scope of review**				**relevance**
no	statement		**Review of the diagnostic and testing process**	**Review of the systems and processes supporting the discussions and actions after inconclusive test result**	**What is the 'line of sight' about the provision of services and the governance aspects**	**When and how often were clinical protocols in the department reviewed What are the peer review processes**	
7b.6	NBHS Non attendance for newborn hearing assessment is reported in accordance with NBHS guidelines	All DNA assessments over past 12 months	Yes - part of ability to manage cases	Yes - particularly important for inconclusive cases	Yes - audit could be reported to Director	Yes - should be in protocols	
7b.7	When Audiology refers families to other agencies and services, there is ongoing sharing of information by audiology.	3 case studies	Yes - part of ability to manage cases	Yes - particularly important for inconclusive cases	Yes - case studies could be reported to Director	Yes - should be in protocols	
7b.8	Feedback from other agencies is used to inform the Audiology IMP.	3 case studies	Yes - part of ability to manage cases	Yes - particularly important for inconclusive cases	Yes - case studies could be reported to Director	Yes - should be in protocols	
7c.1	Audiology initiate, and offer, the first multi-agency meeting with the family within 12 weeks of confirmation of a significant hearing loss.	Audit of diagnosis to first collaborative meeting within 12 week target All cases over past year				Yes - should be in protocols	
7c.2	Audiology provide input to the initial, and subsequent, Multi Agency support plan (MASP)s.	Examples of MASPs	Yes - part of ability to manage cases			Yes - should be in protocols	
7c.3	Audiology meet the agreed actions of a MASP	Examples of MASPs	Depends on agreed actions			Yes - should be in protocols	
7c.4	Audiology Services provide information to Education for School Age Children when requested.	Copies of reports sent/information provided.	Yes - part of ability to manage cases			Yes - should be in protocols	
8a.1	The Audiology service, surveys service user views, including the views of children/young people where possible, at least every two years, or sooner if significant changes are made in service provision.	Report(s) of consultation/questionnaires produced and action plan implemented.			Yes - could be reported to Director	Yes - should be in protocols	
8a.2	NBHS The Audiology service surveys the views of parents of children with a hearing loss at least every three years.	Report(s) of consultation/questionnaires produced and action plan implemented.			Yes - could be reported to Director	Yes - should be in protocols	
8a.3	The Audiology service seeks the views of Stakeholders at least every five years.	Report(s) of consultation/questionnaires produced and action plan implemented.			Yes - could be reported to Director	Yes - should be in protocols	
8a.4	Results of surveys and QRT scores, and outcomes, are made widely available	Evidence of dissemination			Yes - should be in service annual report / improvement plan		
8a.5	Using all of the information gathered above, and the outputs of the Quality Standards visit, an ongoing programme of service improvement, is in place.	Service improvement Plan including reference to all elements within Standard 8 Direct discussions with staff during external audit visit Timescales for implementation of service improvements			Yes - service improvement plan should be agreed with and overseen by Director		
8b.1	A local CHSWG exists.	Local Terms of Reference Document Minutes of CHSWG meetings			Yes - Director should be aware of group and have oversight of work		
8b.2	The local CHSWG meets at least 6 monthly.	Minutes of CHSWG meetings			Yes - Director should be aware of group and have oversight of work		
8b.3	Audiology services participate in the local CHSWG.	Minutes of CHSWG meetings			Yes - Director should be aware of group and have oversight of work		
8b.4	Audiology ensures that the outcomes of Quality Standards and satisfaction surveys are reported to CHSWG.	Minutes of CHSWG meetings			Yes - Director should be aware of group and have		

					oversight of work		
8b.5	NBHS NBHS is a standing agenda item at CHSWG.	Minutes of CHSWG meetings			Yes - Director should be aware of group and have oversight of work		
9a.1	Local referral pathways from Audiology are in place regarding aetiological investigations for children with hearing loss.	Local pathways	Yes - part of managing cases			Should be in protocols	
Criteria		**Example evidence as given in QS**	**Scope of review**				**Relevance**
no	statement		**Review of the diagnostic and testing process**	**Review of the systems and processes supporting the discussions and actions after inconclusive test result**	**What is the 'line of sight' about the provision of services and the governance aspects**	**When and how often were clinical protocols in the department reviewed What are the peer review processes**	
9a.2	Local guidelines, which reflect national guidelines, are in place regarding aetiological investigations for hearing loss	Local guidelines					
9a.3	Aetiological investigations are offered, and carried out, in line with local and national guidelines	5-10 case studies					
9b.1	All staff working within the collaborative team have appropriate qualifications, training and expertise for their role	List of members of collaborative team List of qualifications/training and registration Medics have specific experience/relevant training in medical aspects related to newborns and early years					
9b.2	NBHS All medical staff working within the collaborative team have appropriate qualifications, training and expertise for newborn/early years work.	List of qualifications/training and registration					
9b.3	The team informs the family about all communication options and supports the family to achieve an informed choice.	Examples of cases showing discussion of communication options and support provided where required.					
9c.1	The MASP is informed by the information gathered throughout the multi-agency assessment phase.	Copies of 5 MASPs					
9c.2	There are agreed processes in place to enable the MASP to be in place within 12 weeks of confirmation of a significant hearing loss.	Protocols/pathways					
9c.3	A MASP meeting is offered at least 6 monthly for pre-school children	Audit of meetings offered for all children attending over past year					
9c.4	There are recognised and agreed pathways for multi-agency review of school-age children.	Pathways Examples of local practice	Yes - need knowledge of this to appropriately mange cases			Yes - should be in protocols	
9c.5	Each agency undertakes the more detailed assessments and information gathering necessary to complete the clinical, educational and social input to the MASP. During this process information is shared with all members of the MASP team	5 Case Studies Record of MASPs	Yes - needed to mange cases appropriately		Yes - case studies could be shared	Yes - should be in protocols	
9c.6	The MASP includes details of service provision from those currently involved with the child / young person and family.	Copies of 5 MASPs				Yes - should be in protocols	
9c.7	The MASP details any identified needs (desired outcomes) for the child /young person and family including agreed actions with responsible individuals and timescales recorded.	Copies of 5 MASPs				Yes - should be in protocols	
9c.8	The MASP will be reviewed and updated regularly	Copies of 5 MASPs				Yes - Audiology role should be in protocols	
9c.9	The MASP is circulated to all members of the collaborative team including the family	Copies of 5 MASPs				Yes - Audiology role should be in protocols	

Appendix B - Higher Training Scheme competencies in Paediatrics

N. B. criteria 12 applied to newborn hearing screening follow-ups only, references to hearing aids relevant only in appropriate clinics / with children with aids.

Competency areas for which concern was raised, for some elements of testing and management, are highlighted in yellow.

Competency		0 - Does not meet required standard	1 - Meets required standard	2 - Exceeds required standard
1	Prepare test facilities & equipment, to include daily calibration checks and room set up	Omits or incorrectly performs calibration checks and equipment setup, OR is unable to identify the consequences of proceeding with incorrectly calibrated or faulty equipment, or room set up inappropriate for the session	Performs calibration checks and equipment setup correctly, and is able to identify the main consequences of proceeding with incorrectly calibrated or faulty equipment, and the room is set up appropriately for the session	Performs calibration checks and equipment setup skilfully, and is able to identify detailed consequences of proceeding with incorrectly calibrated or faulty equipment, and room is set up with a high attention to detail and patient needs
2,3	Formulate assessment plans, liaising with the relevant professionals to co-ordinate assessments & care, as appropriate. Plan clinical approaches, using clinical reasoning strategies, evidence based practice	Does not select appropriate or person-specific assessment or management plans, OR is unable to explain the reasoning behind the approach taken, OR does not show sufficient knowledge of the current research evidence and clinical guidance, OR does not liaise with relevant professionals as appropriate	Identifies appropriate assessment and management plans, and modified to meet individual needs. Is able to broadly explain the reasoning underpinning the approach taken using current research evidence and clinical guidance. Liaises with relevant professionals as appropriate	Creates an assessment or management plan which is highly tailored to the patient's specific needs and consistent with current clinical guidance and evidence-based practice and liaises with the relevant professionals as appropriate
4	Take a full and relevant history	Obtains insufficient information about the child's history to date, family history or parent's / carer's understanding	Uses effective questioning and listening to elicit sufficient information about child's history to date, family history AND parent's / carer's understanding	Uses skilful questioning, and active listening to elicit a comprehensive picture of the patient's history to date, family history and parent's / carer's understanding
5	Carry out testing / verification in a safe and effective manner adapting as required to ensure testing / verification is appropriate for the developmental age of the child, and information gained is maximised within the time available	Assessment is unsafe, OR does not follow local or national guidance (or without evidence based justifications as to why not), OR is not completed within an appropriate time, OR does not adapt the testing process to maximise data collection	Performs assessment safely, according to local and national guidance and within the appropriate appointment time allocation. Adapts the testing process where appropriate to ensure the most valuable data is prioritised	Performs assessment skilfully, according to local and national guidance and within the appropriate appointment time allocation. Adapts the testing process where appropriate to ensure the most valuable data is prioritised
6	Show creativity, initiative and originality of thinking in tackling and solving practical problems	Does not show creativity, initiative and originality of thinking in tackling and solving practical problems if they arise during the session	Shows creativity, initiative and originality of thinking in tackling and solving practical problems if they arise during the session	Shows a high level of creativity, initiative and originality of thinking in tackling and solving practical problems if they arise during the session
7,8	Collate relevant information, interpret and make an informed decision concerning the diagnosis and management of individual cases, to include hearing aid programming adjustments and onward referral to ENT or other appropriate professions if any red flags or significant hearing changes. Ensure that parents / carers are part of the decision making with use of patient centred care	Does not identify an appropriate range of diagnostic and management options for the patient or does not ensure parents / carers are part of the decision making process	Integrates the details from the history, test results, research evidence, current clinical guidance and patient preferences to identify a range of appropriate diagnostic and management options for the patient, including onward referral AND ensures the parents / carers are part of the decision making process	Integrates the details from the history, test results, research evidence, current clinical guidance to identify the full range of appropriate diagnostic and management options for the patient, (including onward referral) and their likely benefits and limitations, and fully involves the parents / carers in decision making

Competency		0 - Does not meet required standard	1 - Meets required standard	2 - Exceeds required standard
9	Ensure any concerns regarding safeguarding are recorded appropriately and are acted on, adhering to local protocol	Does not pick up on safeguarding concerns OR does not record them appropriately, OR does not act according to local protocol	Picks up on safeguarding concerns and records them appropriately according to local protocol	Picks up on safeguarding concerns and shows a high level of knowledge about how to act on these, using appropriate documentation and referring to local protocols
10,11	Keep parent/carers and patients fully informed during all aspects of the appointment, obtaining consent for procedures as appropriate Communicate effectively with parents and children giving clear information on the plan for the session, hearing aid orientation, results, recommendations and management plan to children and families using appropriate language and communication strategies. Give clear information on results of hearing tests, advice and recommendation for follow-up actions/interventions to parents/carers and/or patients using appropriate language and communication strategies. This includes the ability to 'share difficult news' to parents/carers about hearing loss in infants and children	Communicates information to parents / carers in a way that is generally unclear or contains irrelevant information OR does not obtain consent	Communicates relevant information about testing and management options to parents / carers clearly and in a way that broadly meets their needs. Obtains consent	Effectively and clearly communicates relevant information about testing and management options to parents / carers in a way that is highly tailored to their needs. Obtains consent.
12	Through peer review, critically appraise the interpretation of results and management outcomes made by other clinicians; identify indicators for improvement, and feedback as appropriate.	Is not familiar with criteria OR does not interpret traces correctly OR does not select appropriate improvement indicators OR does not feedback appropriately	Shows familiarity with criteria, appraises results and management options appropriately, identifies improvement indicators and feeds back	Shows a high level of familiarity with criteria, skilfully appraises results and management options, identifies improvement indicators and feeds back
13	Keep appropriate clinical records	Clinical record omits key information or is omitted from the clinical record system	Provides a clear summary of the clinical episode, which is stored in an appropriate clinical record system	Provides clear and detailed information about the clinical episode, which is stored in an appropriate clinical record system
14	Write reports on test results and recommendations suitable for the intended audience, to include a range of professionals and parents/carers	Report omits key information, is disorganised or written using unprofessional terminology	Report provides a clear summary of the clinical episode which is logically structured and written using professional terminology	Report provides clear and detailed information about the clinical episode which is highly organised, concise, and well written using professional but accessible terminology

Continued overleaf

Competency		0 - Does not meet required standard	1 - Meets required standard	2 - Exceeds required standard
15	Demonstrate the ability to, and articulate clearly through presentation and constructive discussion with colleagues: • Relate their own practice to a supporting knowledge base – including reference to evidence based and/or recognised good practice • Clearly justify any of their own clinical decisions made in the assessment or management of patients • Critically appraise the context of individual assessments within national and local structures/processes for assessment and diagnosis of hearing impairment • Critically evaluate and reflect on their own actions • Show independent thought through evaluation and presentation of alternative (and justified) approaches to existing local practice	Limited ability to reflect on and critically evaluate own clinical practice, or explain clinical reasoning. Demonstrates limited knowledge of subjects discussed OR Does not demonstrate a good working knowledge of relevant national guidelines or policies, or evidence base, or calibration aspects OR Unable to interpret or make informed decisions concerning the diagnosis, needs or management of individuals cases OR Does not demonstrate a good working knowledge of local structures, or offer critical comment OR Does not demonstrate critical evaluation or reflection skills of own practice and others, or not aware of the limits of own skills or knowledge, or when to seek advice OR Does not show independent thought during constructive discussion	Able to reflect on and critically evaluate own clinical practice, and explain clinical reasoning. Demonstrates comprehensive knowledge of subjects discussed AND Demonstrates a good working knowledge of relevant national guidelines and policies, relevant evidence base, has a good working knowledge of the relevant calibration aspects of any equipment used AND Demonstrates the ability to interpret and make informed decisions concerning the diagnosis, needs and management of individual cases AND Demonstrates a good working knowledge of the local structures (i.e. care pathways) for processing patients and offer critical comment AND Demonstrates critical evaluation and reflection skills of own practice and others, and awareness of the limits of own skills and knowledge and when to seek advice AND Shows independent thought during constructive discussion	Able to provide insightful reflection and critical evaluation of own clinical practice, and explain clinical reasoning with reference to research evidence and clinical practice AND Demonstrates wider knowledge of subjects discussed AND Demonstrates a high level of working knowledge of relevant national guidelines and policies, relevant evidence base, Has a high level of working knowledge of the relevant calibration aspects of any equipment used AND Demonstrates the ability to skilfully interpret and make informed decisions concerning the diagnosis, needs and management of individual cases AND Demonstrates a high level of working knowledge of the local structures (i.e. care pathways) for processing patients and offer critical comment AND Demonstrates a high level of critical evaluation and reflection skills of own practice and others, and high awareness of the limits of own skills and knowledge and when to seek advice AND Shows a high level of independent thought during constructive discussion

Appendix C – Topic guides

Topic guide for staff interviews (Audiologists)

Introduction:

Reminder of the purpose of the interview: to ensure everyone has opportunity to input into the review, to find out more about their experiences and thoughts of working in the department and of governance aspects, opportunity for them to highlight areas of good practice and if there are any areas of concern. The ultimate aim to ensure the patients and their families receive the expected level of service.

What is said during the interview is confidential, and will be used together with the other information from the visit to write a report for the Trust. Anything we write about in the report from these interviews will be kept anonymous. There are only two occasions when this would be broken;

- If something was raised which is a clinical risk, which we would have a duty to report.
- We might find that training needs are identified, and if so, would need to highlight which members of staff may benefit from which training.

Are you happy to proceed on that basis?

We are not trying to catch individuals out, we want to get an accurate picture of the service, and therefore would like everyone to be as open and honest as possible. We will be making notes as we are meeting with lots of people and don't want to lose track.

1. Can you give us a summary of your career to date, from how you decided to work in Audiology and how you trained, to your current post?

Prompts: Why audiology, where trained, what qualifications, where worked / roles, when joined Lothian, role at Lothian - range of clinics / frequency

2. What do you enjoy and what do you not enjoy about your current role?

Prompts: enjoy all clinics equally, some more challenging, would like to do more or different clinics?

3. What does it feel like to work at Lothian?

Prompts: close / happy team, busy?

4. How do you keep up to date with clinical practice? Are you supported with this by the Trust (time / resources)? Do you enjoy development opportunities?

Prompts: examples of CPD, courses, conferences, access and use of the evidence base, membership of professional bodies, team approach?

5. What level of confidence do you have in your current clinical skills and knowledge?

Prompts: better in some areas that others? Is line manager aware of any areas of weakness / areas needing updating?

6. Once you have completed testing a child, how to you know how to manage them, e.g. discharge, review, diagnose hearing loss?

Prompts: what review period, how is it ensured there is a consistency of decision making across all clinics, how confident are they at diagnosing a hearing loss

7. Are you confident to diagnose a permanent hearing loss if you found one?

Prompts: Have you diagnosed PCHI, who gives the diagnosis, training in sharing the news?

8. Do you use clinical guidelines or protocols?

Prompts: which ones / when used / where are they kept / who develops them / when did you last refer to them.

9. What would you do if you have concerns about a child, from a safeguarding angle? Have you had any safeguarding concerns?

Prompt: procedure for reporting, what constitutes a concern, e.g. with loss and DNAs

10. How would you rate the services offered by Paediatric Audiology and why?

Prompts: would they recommend the service / areas of good practice / areas needing improvement

11. How is the service reviewed and developed?

Prompts: protocol review and updating, willing to acknowledge problems, who does work / leads, work together to improve performance, team meetings, audit work and surveys, is quality important?

12. What do you do if you have concerns about the service? Do you know what to do if you feel concerns are not being addressed?

Prompts: confident to raise concerns, confidence they will be listened to, whistle-blowing procedure

13. How are complaints handled, for example if someone started complainingin a clinic or a complaint letter was received?

Prompts: Who do they got to, Trust procedures, does dept regularly review complaints and lessons learnt?

14. Who is your line manager? Do you meet with them individually?

Prompts: regular 1:1s, appraisal / objectives / PDP, feel supported and valued?

15. How does the department celebrate success?

Prompts: how is success communicated / recognised, shared sense of achievement?

16. Any other questions which have arisen from discussion or observation.

17. Is there anything else you would like to say that we have not covered?

Topic guide for staff interviews (Groups)

Introduction:

Reminder of the purpose of the interview: to ensure everyone has opportunity to input into the review, to find out more about their experiences and thoughts of working with the department and of governance aspects, opportunity for them to highlight areas of good practice and if there are any areas of concern. The ultimate aim to ensure the patients and their families receive the expected level of service.

What is said during the interview is confidential, and will be used together with the other information from the visit to write a report for the Trust. Anything we write about in the report from these interviews will be kept anonymous. There are only two occasions when this would be broken;

- If something was raised which is a clinical risk, which we would have a duty to report.
- We might find that training needs are identified, and if so, would need to highlight which members of staff may benefit from which training.

Are you happy to proceed on that basis?

1. Can you tell us about your relationship with the Paediatric Audiology Department? (Audiologists - for admin teams and screeners)

Prompts: close working, joint clinics, good relationship, who is communication with, regular meetings and discussions, feed into

2. Do you have agreed referral pathways and criteria between your service and Paediatric Audiology (not to admin teams or screeners)

Prompts: how are these developed and reviewed, who are these agreed with, are thy written down, how are they circulated?

3. Can you highlight some areas of good practice? (Admin team & screeners - what works well?)

4. Are there any areas which need improvement or are of concern?

Topic guide for staff interviews (additional questions for Head of Service)

1. How are the various management responsibilities organised, e.g. dedicated regular time for this, are some aspects delegated?

Prompts: Who does what / timetabling / staff management / who is responsible in HoD absence?

2. Are there any specific clinical responsibilities for the HoD, e.g. does anything need to be checked, signed off etc.?

Prompts: what happens during absence, if signing off why is this (? lack of confidence in others / oversight)

3. How is it decided which staff do which clinics?

Prompts: does a particular band of staff do particular clinics or those with particular training

4. How does communication work within the department?

Prompts: team meetings, huddles, emails, informal discussion, challenges with part time staff

5. How does training and CPD work, does the department have a budget for this, and how are needs identified?

Prompts: Included in appraisal process, training updates for whole department or individuals, do staff go to conferences, regional meeting etc.

Appendix D – Document review summary

Document	Content	Issue date	Review date	References appropriate	Process clear?	Guidance appropriate?	Permissible deviations clear?	Technical accuracy	Notes
2A tertiary protocol May 2020	List of contents of appointment only	May 2020	May 2023	None given	Limited info	None given	Yes, speech testing not needed if PTA performed	N/A – not a technical guideline.	Could be combined with documents giving criteria for these clinics, referral pathways and clinic templates
Care pathway NICU Aug 17	List of procedures and management options for babies referred from screen	June 2021	June 2023	None given	Possible conflict as to what to do with mild losses, review at 8 moths or see for second test?	More detail needed for clarity	None given	Does not give pass levels for OAEs, mentions using TPOAES or DPOAES but does not provide guidance about how to select which one	No consideration of aiding mild losses or unilateral until 8 months, Could be combined with SCBU and well baby pathways as much is repeated, also CABR clinic template
Care pathway SCBU Aug 17	List of procedures and management options for babies referred from screen	June 2021	June 2023	None given	Possible conflict as to what to do with mild losses, review at 8 moths or see for second test?	More detail needed for clarity	None given	Does not give pass levels for OAEs, mentions using TPOAES or DPOAES but does not provide guidance about how to select which one	No consideration of aiding mild losses or unilateral until 8 months, , Could be combined with NICU and well baby pathways as much is repeated, also CABR clinic template
Care pathway Well Aug17	List of procedures and management options for babies referred from screen	June 2021	June 2023	None given	Possible conflict as to what to do with mild losses, review at 8 moths or see for second test?	More detail needed for clarity	None given	Does not give pass levels for OAEs, mentions using TPOAES or DPOAES but does not provide guidance about how to select which one	No consideration of aiding mild losses or unilateral until 8 months, , Could be combined with NICU and SCBU baby pathways as much is repeated, also CABR clinic template
CDAC criteria April 2021	Criteria for clinic only	April 2021	April 2024 or Oct 2022, two dates given	References 2007 audit, no academic / guideline references	No details given on referral pathways	yes	None given	N/A – not a technical guideline.	Could be combined with 2A tertiary protocol
CF Protocols Dec 2019	Referral routes and management options for children with CF dependent on results	Assumed Dec 2019 from file name, not in document	December 2022	References 2007 audit, no academic / guideline references	Yes	yes	None given	N/A – not a technical guideline.	Primarily guide for children who have had / are having ototoxic medication. Hearing loss can occur within a few months of having stopped medication so standard review period of 12 months should have additional reviews introduced at intervals within that timeframe.
Clinic template CABR May 20	Partial guidance, has preferred assessments, minimum assessments and pass levels	May 2020	May 2023	None given	No process info	No guidance on management other than discharge requirements	None given	Pass requirements for TOAE not given	Could be combined with NICU, SCBU and well baby Care pathways

Document	Content	Issue date	Review date	References appropriate	Process clear?	Guidance appropriate?	Permissible deviations clear?	Technical accuracy	Notes
Clinic template CAC 1A May 20	Partial guidance, has preferred assessments, minimum assessments and some pass levels	July 2009, reviewed May 20	May 22	None given	No process info	No guidance on test selection, results integration or management other than discharge requirements	Gives minimum assessments required	Pass levels given for PTA and are fine assuming HL dB scale. No details given about pass levels for other tests	Could be combined with criteria for this clinic and referral routes no info no how any decisions are made about appropriate tests or what to do if pass level not reached
Clinical Template CAC 2A May 20	Partial guidance, has preferred assessments, minimum assessments and some pass levels	July 2009, reviewed May 20	May 22	None given	No process info	No guidance on test selection, results integration or management other than discharge requirements	Gives minimum assessments required	Pass levels given for VRA may be fine but dB scale and transducer not given. No details given about pass levels for other tests	Could be combined with criteria for this clinic and referral routes no info no how any decisions are made about appropriate tests or what to do if pass level not reached
Clinic template CD-MDAC May 20	Partial guidance, has preferred assessments, minimum assessments and pass levels, Conductive loss clinic with ENT and Paediatrician	May-20	May-23	None given	no process info	No guidance on test selection, results integration or management other than discharge requirements	None given	dB scales not given, type of OAE not given, pass levels only given as dB level by frequency (i.e. Does not mention speech , OAE pass levels etc.)	Has staffing, tests available, 'preferred assessments', minimum assessments required and pass / discharge levels, but no info no how any decisions are made about appropriate tests or what to do if pass level not reached
Clinic template CP Microtia May 20	Partial, has preferred assessments, minimum assessments and pass levels, Cleft palate and microtia clinic	May-20	May-23	None given	no process info	No guidance on test selection, results integration or management other than discharge requirements	None given	dB scales not given, type of OAE not given, pass levels only given as dB level by frequency (i.e. Does not mention speech , OAE pass levels etc.)	Has staffing, tests available, 'preferred assessments', minimum assessments required and pass / discharge levels, but no info no how any decisions are made about appropriate tests or what to do if pass level not reached
Clinic template ENT May 20	Partial, has preferred assessments & minimum assessments, ENT clinic testing for 3 yrs +	May-20	May-23	None given	no process info	None given	None given	dB scales not given, type of OAE not given, pass levels for tests not given	Has staffing, tests available, 'preferred assessments', minimum assessments required and pass / discharge levels, but no info no how any decisions are made about appropriate tests or what to do if pass level not reached

Document	Content	Issue date	Review date	References appropriate	Process clear?	Guidance appropriate?	Permissible deviations clear?	Technical accuracy	Notes
Clinic Template FDA May 20	Partial, has preferred assessments, minimum assessments and pass levels, Further diagnostic assessments from 4 mths +	May-20	May-23	None given	no process info	No guidance on test selection, results integration or management other than discharge requirements	None given	dB scales not given, type of OAE not given, pass levels only given as dB level by frequency (i.e. Does not mention speech , OAE pass levels etc.)	Wider range of tests to include ABR / CM, both types of OAE & more speech Has staffing, tests available, 'preferred assessments', minimum assessments required and pass / discharge levels, but no info no how any decisions are made about appropriate tests or what to do if pass level not reached
Clinic template MAC May 20	Partial, has preferred assessments, minimum assessments and pass levels, 7Mths + with paed	May-20	May-23	None given, does not reference other dept. guidelines	no process info	None given	None given	dB scales not given, type of OAE not given, pass levels only given as dB level by frequency (i.e. Does not mention speech , OAE pass levels etc.)	Has staffing, tests available, 'preferred assessments', minimum assessments required and pass / discharge levels, but no info no how any decisions are made about appropriate tests or what to do if pass level not reached
Clinic template MDAC May 20	Partial, has preferred assessments, minimum assessments and pass levels, Multi-'disciplined', 7 mths + with Paed and ENT	May-20	May-23	None given, does not reference other dept. guidelines	no process info	None given	None given	dB scales not given, type of OAE not given, pass levels only given as dB level by frequency (i.e. Does not mention speech , OAE pass levels etc.)	Includes in pass level box: Important - OAE's must be recorded bilaterally on any child who may have a SNHL indicated at neonatal diagnostic assessment Has staffing, tests available, 'preferred assessments', minimum assessments required and pass / discharge levels, but no info no how any decisions are made about appropriate tests or what to do if pass level not reached
Clinic template PVC Aug 21	Partial, has preferred assessments, minimum assessments and pass levels Vestibular clinic, 3 yrs +, with Paed, ENT and Neurology	May-20 Also stated created by D Lamerton August 2021'	May-23	none	no process info	None given	None given	dB scales not given, type of OAE not given, pass levels only given as dB level by frequency (i.e. Does not mention speech , OAE pass levels etc.)	Lists range of hearing tests in addition to vestibular. Has staffing, tests available, 'preferred assessments', minimum assessments required and pass / discharge levels, but no info no how any decisions are made about appropriate tests or what to do if pass level not reached
Clinic template TABR May 20	Partial, has preferred assessments, minimum assessments and pass levels Tone pip ABR birth - 4 months	May-20	May-23	none	no process info	None given	None given	dB scales not given, type of OAE not given, pass levels only given as dB level by frequency (i.e. Does not mention speech , OAE pass levels etc.)	Has staffing, tests available, 'preferred assessments', minimum assessments required and pass / discharge levels, but no info no how any decisions are made about appropriate tests or what to do if pass level not reached

Document	Content	Issue date	Review date	References appropriate	Process clear?	Guidance appropriate?	Permissible deviations clear?	Technical accuracy	Notes
CMV guideline Nov 19	Yes	Oct-18	Oct-22	BAAP referenced only. Scottish CMV guidelines not referenced, which do give guidelines for audiology follow-up which differ	Gives detail of frequency of review, does not include what tests should be done	Not in line with Greater Glasgow & Clyde guidelines, see*	None given	Audiology follow-up also mentions 'dependent on audiometric results', but does not say how. Does not say how to interpret results, but does include if a hearing loss is indicated HA and CI pathways should be followed	Well written with names of those involved in development, using Trust template *https://www.clinicalguidelines.scot.nhs.uk/nhsggc-paediatric-clinical-guidelines/nhsggc-guidelines/neonatology/cytomegalovirus-cmv-congenital-infection. Or PIER, see https://www.piernetwork.org/congenital-cmv.html#CMVFlow3 or NDCS see file:///C:/Users/hcmar/Downloads/cmv-factsheet_june2018.pdf who all recommend the same follow-up but this differs from what is in this guideline
Dynamic Gate Index draft	Adult protocol	Not given	Not given	Non given	Very brief	The guidance has been written for adults	None given	Adult protocol – outside scope of review	This is an adult protocol with no reference to its use with children
Dynamic Visual Acuity Draft	Adult protocol	Not given	Not given	Non given	Very brief	The guidance has been written for adults	None given	Adult protocol – outside scope of review	This is an adult protocol with no reference to its use with children
Fukuda draft	Adult protocol	Not given	Not given	Non given	Very brief	The guidance has been written for adults	None given	Adult protocol – outside scope of review	This is an adult protocol with no reference to its use with children
MDAC criteria 2019	Tertiary MDT clinic referral criteria	Mar-16	Oct-22	Referenced 2007 PA & NHSP audit	States criteria, but not how to refer	Yes, if locally there are ample MDAC clinics to avoid delaying diagnosis and management	Yes, can discuss appropriateness of other cases	N/A	Could be combined with clinical templates
NHSL Headed HAC - 1 Discussion of Aiding	Overview of what should be done at appt to include testing	not stated by probably April 20	Apr-22	References BSA docs for testing and examination, does not reference any MHAS docs.	Yes, but does not reference other guidelines, e.g. Technical guidance on carrying out test	Yes	None given	Does not include any guidance on how information gathered should be used to decide on aids.	Proposed stated in procedure is to outline discussion points, yet procedure is broader than this to include how to refer, what testing to do, what to consider when selecting aids, so propose should be amended to reflect this. Does not include what to do next, e.g. how to book next appt. Acknowledges that BSA guidelines were the current versions at time of writing, all still current

Document	Content	Issue date	Review date	References appropriate	Process clear?	Guidance appropriate?	Permissible deviations clear?	Technical accuracy	Notes
NHSL Headed HAC - 2. First Fitting of HAs	Appointment booking and content, considerable detail included	not stated by probably April 20	Apr-22	References BSA doc, does not reference any MHAS docs.	Yes, but does not reference other guidelines, e.g. Technical guidance on carrying out test, other than REM & RECD guidelines	Yes	None given apart from ''as appropriate'	mentions 'as appropriate', but no guidance on when these are appropriate	Acknowledges that BSA guidelines were the current versions at time of writing, all still current
NHSL Headed HAC - 3. FU to FF	Appointment booking and content, considerable detail included	not stated by probably April 20	Apr-22	References BSA docs, does not reference any MHAS docs.	Yes, but does not reference other guidelines, e.g. Technical guidance on carrying out test, other than REM & RECD guidelines	Yes	Non given apart from 'as required'	Does not include checking the aid is functioning correctly. Talks about speech testing but does not include details of what should be considered acceptable in terms of results.	Mentioned returning aids to 'trial stock' - infection control issue? Acknowledges that BSA guidelines were the current versions at time of writing, all still current
NHSL Headed HAC - 4. Review and Exchange	Appointment booking and content, considerable detail included	not stated by probably April 20	Apr-22	References BSA doc, does not reference any MHAS docs.	Yes, but does not reference other guidelines, e.g. Technical guidance on carrying out test, other than REM & RECD guidelines	Yes	Non given apart from 'as required'	Does not include checking the aid is functioning correctly	Acknowledges that BSA guidelines were the current versions at time of writing, all still current
NHSL Headed HAC - 5. Transition	Detail of transition support and process depending on local dept.	not stated	May-22	No references given. There are QS for Scotland, see**	Yes	Okay, but not in line with Scottish standards	None given	N / A - Not technical guideline	**https://nesvleprdstore.blob.core.windows.net/nesndpvlecmsprdblob/79b066ae-d459-4a58-adfa-4eba4c4a674a_Quality%20StandardsTransition%20from%20Paediatric%20to%20Adult%20Audiology%20Services.pdf?sv=2018-03-28&sr=b&sig=Tx1mRwCb1yK4NWGcOgnBkSM323%2BEXlqZrT2uBG3PAdA%3D&st=2021-10-01T13%3A49%3A41Z&se=2021-10-01T14%3A54%3A41Z&sp=r
NHSL Headed HAC - 6. Admin	Admin procedures to include concerns regarding DNAs	not stated	not stated	None given	Yes	Yes	None given	N/A - Not technical guideline	Admin / record keeping guidelines applying to other HAC protocols - yet not referenced by them No similar document for other areas of audiology Guidance with regard to DNAs could be more explicit, e.g. when should you be concerned and links to child protection team
NHSL Headed HAC - 7. CROS and BiCROS	Rational, candidacy and fitting procedure, considerable technical detail	not stated	Feb-23	BSA probe mic, BSA ear exam and one journal article	Yes	Yes	None given	Yes – does not include guidance on what is acceptable tolerances for meeting prescription targets for BiCROS	

Document	Content	Issue date	Review date	References appropriate	Process clear?	Guidance appropriate?	Permissible deviations clear?	Technical accuracy	Notes
NHSL Headed HAC - 8. Bone Conduction HAs	Discussion point and Clinical procedure for fitting BC aids	not stated	Jun-22	References BSA docs for testing and examination, no references for BC fittings	yes	Yes	Some given, e.g. Can make adjustments, consider doing aided testing	Yes Refers to separate 'how to' sheets, not included in review	No referenced to testing procedures. Acknowledges that BSA guidelines were the current versions at time of writing, all still current No references to other departmental procedures, e.g. completing questionnaires
NHSL Headed HAC - 9. Repairs	Guidelines for hearing aid repairs	not stated	Apr-22	None given	yes	Yes	none given	N/A - Not technical guideline	Mentions loan aids - potential infection control issue? Need to be updated as still references Arlington labs
NHSL Headed Q Protocol May 2022 review	Questionnaire guidelines	not stated	May-22	Yes, references for the different questionnaires plus PASAG reference guide	Yes	Yes, but does not say how to use results / interpretation	None given	No detail given about scoring questionnaires, and how to interpret results	does not say how to use results / interpretation
NHSL Headed ANSD May 2020	Explanation of ANSD and pathway	not stated	May-23	None given	Yes	yes	None given	No details given of actual testing (e.g. Should be as per BSA, 2019), re-test not nec. at 8 - 10 weeks corrected age, behavioural follow-up at 8 months (should be 6)	V brief, can't be used as guide for testing, only pathway Could consider combining with Care pathways for SCBU / NICU / Well babies and CABR clinic template
NHSL Procedure Audio led ENT clinics April 2021	Clinical process for new clinics to help with ENT backlog	not stated	May-24	None given	Yes	None given	None given	N/A - not technical guideline	Mentions 'assess hearing using cross checking principles' referring to speech and OAEs, but no details given as to how this should be done, in this or any other guideline
NHSL Procedure Co-operative testing May 20	Co-operative and modified distraction test guidelines	Apr-01	May-23	PA 0-5 yrs only	Yes - but incorrect	No	None given	No - misses out key detail of the timing of the instruction to the child, and also suggests testing in each ear which is not possible as it is a soundfield test. States there is a discrimination part of the test which is modified distraction and it is suitable for children of 18 months, which it is not, and should not be carried out in this age group as it is not developmentally appropriate and is highly likely to lead to inaccurate results. VRA should be used instead.	States there are two parts to the test, but it is actually talking about two completely separate tests, the second of which is not a recognised test.

Document	Content	Issue date	Review date	References appropriate	Process clear?	Guidance appropriate?	Permissible deviations clear?	Technical accuracy	Notes
NHSL Procedure Distraction test May 20	When opened, this is NHSL Procedure Co-operative testing May 20, and not a distraction test procedure	Unknown as wrong guideline	Unknown as wrong guideline	Unknown as wrong guideline	Unknown as wrong guideline	Unknown as wrong guideline	Unknown as wrong guideline	Unknown as wrong guideline	
NHSL Procedure history taking for hyperacusis pts July 18	Appears the same as May 20 version below, guide to identifying children to refer on.	Jul-18	May-23	none given	Yes	Yes	None given	N/A - not technical guideline	Does not explain how to refer on, what info to give there and then As this is now part of routine history taking it would be better embedded into a guideline covering all history taking - but such a guideline does not seem to exist currently.
NHSL Procedure history taking for hyperacusis pts May 20	Identical to NHSL Procedure history taking for hyperacusis pts July 18	See above	See above	See above	See above	See above	See above	See above	See above
NHSL Procedure history taking for tinnitus pts July 18	Questions to ask in routine Hx taking and when to refer on	July 2018	May 2023	none given	Yes	Yes	None given	N/A - not technical guideline	Does not explain how to refer on, what info to give there and then As this is now part of routine history taking it would be better embedded into a guideline covering all history taking - but such a guideline does not seem to exist currently.
NHSL Procedure performance testing May 20	Test procedure	Aug 2001	May 2023	Old edition of McCormick 0 - 5 years only	Yes	Part - see technical accuracy	None given	Talks about testing each ear, this is not possible as it is a soundfield test. Minimal level should be lower if wanting to confirm satisfactory hearing.	
NHSL Procedure PVC Nov 18	Referral details and vestibular clinic procedures, to include test procedures	Not given	Nov 2020	One reference for each test only	Yes	Yes	None given	Uses test parameters/acceptable results from references given. No details given of when onward referrals are necessary, only state to whom they could occur	Clinics done jointly with Audiologist form adult service
NHSL Procedure Toy Discrimination Test May 20	Test procedure	August 2001	May 2023	Old edition of McCormick 0 - 5 years only	Yes	Yes - other than note under technical accuracy	None given	Suggests testing from each side, and suggests this may help identify differences between the ears. This is not accurate as it is a soundfield test.	
NHSL Procedure virtual hyp clinic Jan 20	Referral, triage and admin processes for virtual hyperacusis clinic	Jan 2020 (from file name, not included in document)	2023	None	Yes	Details of how triage decisions are made is not included	None given	N/A - not a technical guideline	
Paediatric audiology bacterial meningitis follow up guidance	Guidelines for the follow-up of children	Nov 2009	Oct 2022	None	Yes	Yes	None given	N/A as not technical guideline	

Document	Content	Issue date	Review date	References appropriate	Process clear?	Guidance appropriate?	Permissible deviations clear?	Technical accuracy	Notes
Paediatric audiology cleft palate guideline Oct 2019	Pathway / appt schedule for pts with cleft palate	Nov 2009	October 2022	Mentions CLEFTSIS guideline but full reference not given	Yes	MIs-quotes current CLEFTSiS guideline which states annual review up to 5 years, and 'audit' appt at 5 and 10 years***	Says can be discharged if normal and parents' wishes to be discharged - not in-line with current guidelines	N/A - not technical guideline	*** see https://www.cleftcare.scot.nhs.uk/wp-content/uploads/2020/05/202004-CP-Pway.pdf
Paediatric Audiology Downs syndrome follow up guideline	Pathway / appt schedule for pts with Down's syndrome	Nov 2009	October 2022	Mentions DSMIG guideline but full reference not given	Yes	Mis-quotes current DSMIG guideline **** but appointment schedule is appropriate	None given	N/A - not technical guideline	**** see https://www.dsmig.org.uk/wp-content/uploads/2020/04/Best-Practice-Guidance-for-the-management-of-hearing-issues-in-people-with-Down-syndrome-1.pdf
Paediatric Audiology guideline for medical management	Details of pathway and paediatric assessment following diagnosis / suspected diagnosis	March 2016	October 2022	References only for aetiological investigations	Yes	Unclear role of the Audiologist as expert in hearing and hearing loss management*** No recognition that some mild losses should be considered for aiding prior to 8 months	Yes	N/A -= not technical guideline	***** The Audiologist would usually discuss the results with the parents, implications and prognosis as soon as the hearing loss was diagnosed, there is not necessarily a need for a second hearing test
Paediatric Audiology Oncology guideline	Testing schedule and referral routes for oncology patients	March 2016	October 2022	None given	Yes - but audiology test schedule vague	yes	None given	N/A - not technical guideline	
Paediatric audiology PCD follow up guideline	Pathway for children with PCD	Not given	November 2020	None given	Yes	Yes, except for ******	None given	N/A - not a technical guideline	****** States review will be 6 monthly then annually and no mention of discharge, but then talks about re-referral if parents are concerned.
Preschool protocol - Laur May 20	List of contents of 2A clinics, and detail of history, management options	May 2020	May 2023	None given	Yes	No real guidance other than content of appt	None given	N/A - not a technical guideline	Tinnitus and hyperacusis questions could be added to this history rather than be in a separate document. Quite similar to 2A clinic template - unclear of role of each document. Almost identical to school aged protocol, could they be combined to reduce the number of documents, and with clinic templates?

Document	Content	Issue date	Review date	References appropriate	Process clear?	Guidance appropriate?	Permissible deviations clear?	Technical accuracy	Notes
School age protocol May 20	List of contents of 1A clinics, and detail of history, management options	May 2020	May 2023	None given	Yes	No real guidance other than content of appt	None given	N/A - not a technical guideline	Tinnitus and hyperacusis questions could be added to this history rather than be in a separate document. Quite similar to 1A clinic template - unclear of role of each document. Almost identical to pre-school protocol, could they be combined to reduce the number of documents, and with clinic templates?
Specification Doc 2019	Newborn hearing screening guidelines, to include quality standards, governance and responsibilities	2024	None given	Limited	Yes	Yes, but justification of Lothian following a different test (AABR) not included	Yes - management of babies who missed screen included	Unclear is screening is done at 35 or 40 dB normal hearing level	Repeats some of the information in well baby, NICU and SCBU pathways Potential conflict of interest with manager responsible for reporting adverse incidents also leading diagnostic follow-up.
Unilateral protocol	Referrals required and monitoring / review of unilateral losses	Nov 2009	October 2022	None given	Yes	No - intervention stated as reactive to problems having occurred, not proactive to prevent problems occurring******	Non given	N/A - not technical guideline	*******States ' If at any point there is concern regarding the child's progress and functional hearing, intervention may need to be considered.

N.B.

None of the documents contained version numbers

Many different formats / styles / content