BRITISH ACADEMY
OF AUDIOLOGY

Review into

NHS Lothian
Paediatric Audiology

Audit Report

Method

Following the ombudsman report[1], the British Academy of Audiology (BAA) was commissioned to undertake an audit of the NHS Lothian paediatric audiology case load from 2009 to 2018. Upon this announcement, the BAA received 2 pieces of anonymous mail, which gave the names and details of a number of children that were of concern. To allow for auditing to take place effectively, the total case load, 22,900 patients with 45,347 appointments, was initially split into 7 cohorts:

Cohort 1 – Any child whose parents had complained about the audiology service at NHS Lothian and any child whom the BAA had been made aware of through the anonymous mail

Cohort 2 – Any child on the permanent childhood hearing impairment register for NHS Lothian (excluding children in Cohort 1 or 3)

Cohort 3 – Any child who had been seen by the paediatric audiology service at NHS Lothian and discharged (at any age), but went on to be later diagnosed with a permanent hearing loss (excluding children in Cohort 1)

Cohort 4 – Any child seen for ABR testing at birth and following this test result, was discharged from the service with no further appointments (excluding children in cohort 1)

Cohort 5 – Any child seen 3 or more times by the service (excluding children in cohort 1, 2 or 3)

Cohort 6 – Any child seen for behavioural testing once by the service with no further appointments (excluding children in cohort 1)

Cohort 7 – Any child seen twice by the service (both ABR and behavioural) whom were then discharged with no further appointments (excluding the children in cohort 1)

Children were removed from duplicate categories and then cohorts were then stratified by a number of differing methods and sampled at differing rates as per the below table:

Cohort Number	Total number of children in Cohort	Stratified by	Type of review	Total Sample size
1	6	Unstratified	Whole cohort review	6
2	354	Age of identification	Randomised stratified sample: 25% of those diagnosed under the age of 1, 30% of those diagnosed between the age of 1 and 10	100
3	15	Unstratified	Whole cohort review	15
4	723	Year of appointment	Randomised stratified sample: 7% from 2009-2015 and 15% from 2016-2018 giving 10% of total number	71
5	4,106	Number of times seen	Randomised stratified sample: 50% of those seen over 15 times, 25% of those seen 10-15 times, 10% of those seen 9-6 times, 8% of those seen 4-5 times and 6% of those seen 3 times	332
6	13,226	Year of appointment	Randomised stratified sample: 1% from 2009 – 2013, 2% from 2014, 3% from 2015, 5% from 2016, 5.5% from 2017 and 6% from 2018	377
7	4,470	Year of appointment	Randomised stratified sample: 3% from 2009-2013, 5% from 2014-2015, 7% from 2016 and 8% from 2017-2018	212

18 practicing paediatric audiological professionals were initially approached by the BAA 12 of which were appointed to undertake the review together with the Chair and the BAA Board Lead. Representing Scotland, Wales and England, the professionals:

- Are highly experienced audiologists and practicing in the field of paediatric audiology at a minimum of AfC Band 6 with over 5 years' experience in the role or have been within the last 2 years
- Have no connection to NHS Lothian, having never trained there or worked there in the past
- Hold current professional registration from HCPC, RCCP or AHCS
- Agreed to uphold the confidentiality of patients they reviewed

There was a combined experience of over 250 years audiology experience across the panel and the panel included 6 individuals who have represented paediatric audiology on national bodies.

A copy of the form all reviewers signed can be found in appendix A.

Reviewers were asked to review each case on its individual merits and asked to score each case against a given scale:

10 – No issues with the case

7-9 – Minor issues which do not affect the clinical outcome (e.g. gap between appointments appears long, however you have confidence the correct outcome has been achieved)

5-6 – Several minor issues or one moderate issue which has not affected the clinical outcome (e.g. you have concerns over the testing methods or interpretation of a few results, however the overall outcome you agree with)

1-4 – Significant minor issues, several moderate issues or a major issue which has affected the clinical outcome (e.g. a red flag for a hearing loss has been inappropriately acted on or the patient has been discharged despite a poor level of testing, for example discharge from ABR despite not being discharge criteria)

Where the reviewer scored the case below 10, they were asked to complete a spreadsheet outlining the reasons / the issues identified. To ensure consistency across reviewers, 5 dummy records were provided by the Board Lead and Audit Chair and an in-depth feedback and discussion was provided to the reviewers together with regular catch-up meetings where cases and trends were discussed .

If the initial reviewer scored a case 4 or under, the case underwent 2nd review by the Chair or Board lead. Comments from reviewers were then analysed retrospectively to form themes.

Results

Total Sample Size = 1,113 children

We were unable to audit 103 children due to insufficient records on the system to obtain a clinical opinion. These were mainly confined to the early years of the audit (2009-2010). There were also 3 records discounted from the audit, 1 patient sadly passing away shortly after their audiological care began, 1 child had only seen the adult team and 1 child had never been seen (multiple DNA's).

Of the remaining 1,007, no concerns were raised by the audit team for 120 children's records (11.9%).

542 children (53.8%) were identified as having minor concerns.

190 children (18.8%) were identified as having moderate concerns.

And 155 children (15.4%) were identified as having significant concerns.

These 155 children included at least:

12 children who met candidacy for Cochlear implantation who were not referred for assessment or the referral was significantly delayed

9 children where there was no evidence of an offer of a hearing aid, despite likely benefit

49 children where the identification of the hearing loss or the fitting of hearing aid was delayed

30 children where an inappropriate aiding strategy appears to have been followed

There were several main trends identified across the audit and these are detailed below. A copy of the table produced following trend analysis can be found in appendix B

Main Trends Identified

1. Auditory Brainstem Response Testing

The audit team found no evidence that throughout the audit period any ABR protocol had been consistently applied for the electrophysiological assessment of infants referred from the Newborn Hearing Screening Programme or older children. This included:

- 28 children's records where click stimuli alone had been used to assess the air conduction thresholds of infants up until 2021 despite it being phased out in 2010 by the NHSP guidance[2]
- 99 children where ABR testing did not meet the BSA / NHSP guidance[2,3,4,5] at the time or present day, including response absent or inconclusive traces being incorrectly reported and labelled as clear response. This impacted significantly on management decisions for these children including the discharge of infants at the ABR testing stage where the results did not meet discharge criteria
- 8 children with incorrect use of or absence of cochlear microphonic testing when indicated by the ABR results
- 46 children where the air conduction threshold was raised, but no bone conduction testing had been performed

With regards to ABR testing, the audit further identified:

- No evidence that the department used standard descriptions of threshold determination, i.e. less than or equal to (<=), equal to (=) or greater than (>), or BSA standard nHL to eHL corrections when writing reports. Whilst it was beyond the scope of the audit to review hearing aid fittings, this likely resulted in incorrect hearing aid programming
- No evidence that the importance of obtaining a 'gold standard' ABR response had been considered or taken place, i.e. both the discharge and non-discharge cases reviewed showed 4kHz ABR was often 2 runs at 30dBeHL with no other traces recorded for 4kHz but click ABR was also performed

- No evidence that for more complicated children, i.e. such as those with microtia/atresia, the BSA procedure had been followed resulting in no underlying bone conduction thresholds being assessed on the affected ear
- Evidence that for children with unilateral hearing loss, results from ABR were often of air conduction only, meaning the true nature of the hearing loss was not determined at birth
- Masking, when used, was inappropriately applied or in most cases, not performed
- No consistent performance of low frequency (1kHz) air or bone conduction despite raised 4kHz
- No evidence of robust or rigorous internal or external peer review of traces

This poor level of ABR testing at the ABR stage meant that the majority of children with a hearing loss at birth reviewed as part of the audit were not diagnosed and managed at the early life stage but were instead sent for 8 month behavioural testing or discharged inappropriately. This poor level of testing also meant that ABR testing could not be relied upon when required for children with additional needs who could not perform behavioural testing.

2. Behavioural assessment of children

Over 5 years of age

The audit team found that the behavioural assessment of children over the age of 5 without additional needs had only minimal issues which were often procedural or record keeping in nature. Most reports were concise and results obtained by performance or pure-tone audiometry in this age group were appropriate but a large number of the total (at least 282 children's records) lacked fundamental audiological care details, such as otoscopy findings. Management of children in this age group was often in-line with national guidance, however there was limited cross referencing of these results for children where there was parental or professional concerns regarding their hearing (such as OAE or speech testing). It was often at this age, and within this part of the paediatric audiology service, that a hearing loss was diagnosed.

Under 5 years of age

In contrast to this, findings from the under 5 age group indicated significant issues with testing technique, strategy, and management. These included:

- 51 children where glue ear pathways had not appeared to be managed correctly. Across the audited cases we could find no good evidence of a functioning glue ear pathway, with children reviewed multiple times before being referred for ENT management, or discharged with Otitis Media with Effusion.
- 99 children with concerns over inappropriate patient management, such as children repeatedly reviewed with hearing at minimum levels but these children were not discharged, referred onwards or had any clear management plans, with no justification for the follow up evident within the notes
- For 174 children, there was concern over the validity of the behavioural testing. This included an over-reliance on Behavioural Observational Audiometry (BOA) in this age group. A large number of records contained references to eye flicks, head pulls or other behavioural responses which were taken as threshold measurements despite this being against BSA VRA

national protocol[6], guidance and the scientific principle of the test. Children were often discharged or managed based on these results despite earlier testing sessions showing a hearing loss using more conventional behavioural testing methods or ABR

- There was no evidence of an understanding of the developmental age of a child and its impact on the selection of behavioural tests. For example, the use of VRA / BOA on children whose developmental age was significantly outside of the recommended ages, without any documented reason, appeared widespread
- There was evidence of poor starting strategy for VRA. The department often began testing using inserts, rather than attempting and conditioning to soundfield and then moving to inserts. There was also good evidence that children with a hearing loss were often tested unaided using inserts without conditioning to aided soundfield testing to begin with
- A large number of records contained references that when the child showed a hearing loss on behavioural testing, it was only because they were "inhibiting their responses" or that responses were thought to be "suprathreshold", however, there was often no evidence of objective measures being performed to confirm this
- There was no evidence of objective measurements being appropriately / routinely applied or interpreted correctly beyond tympanometry for the under 5 age group. There were a large number of records where clear objective red flags for a hearing loss were present, such as absent OAEs or reflexes in the presence of peaked tympanometry and these red-flags were not acted on. There was also a significant number of records where acoustic reflexes were reported as present or 'suggestive' which were artefactual in nature

The use and over-reliance on behavioural observational audiometry type responses in patients who were developmentally too advanced for this type of testing led to those with a known hearing loss being incorrectly assessed as having normal hearing. This, coupled with the problems with the ABR part of the service detailed earlier, resulted in 82 children who had a hearing loss at birth being late diagnosed. In these 82 children, it was only once the child was older and they were re-referred to the service due to speech concerns or were capable of completing performance testing that they were identified as having a hearing loss.

3. Record and note keeping

The audit team found significant issues with record and note keeping within the department which hindered the clinician's ability to easily establish a clear history and management plan when assessing the child. These included:

- For every child reviewed, almost all information on the child's audiological appointments was contained primarily within the clinic reports and documents, not within the journal function of the patient management system. This meant the clinical reports and history of the child was not easily accessible, thus creating conditions where each appointment was often taken in isolation. These reports frequently lacked detail for both fundamental parts of the audiological appointment (e.g. the recording of ear examination (otoscopy) findings is absent in at least 282 children's records and the panel raised note keeping concerns in at

least 331 records) and any rationale for the decisions made within the appointments or ongoing management plan

- This resulted in diverse decision making in similar scenarios, suggesting a lack of consistency in use of protocols and pathways or that such protocols and pathways are not robust or well implemented
- Journal entries were often entered retrospectively on different dates (up to 6-8 weeks post appointment) by admin staff or clinicians with the briefest of summaries stating whether the child passed or failed (which is not conventional practice in audiology), but with no indication of the level, type of hearing loss or previous history, for example:

  Tested by: xxxx
  Test Used: vra, tymps, toaes
  Results: f
  Action 3/12
- Use of flags and parameters within the patient management system is widespread for conditions such as hyperacusis or children with hearing aids, however these do not appear to be used to aid in the monitoring of specific at risk groups such as Trisomy 21, cCMV etc. In almost all cases audited, the only reference made to a child having these risk factors was in the reports section. The presence of this vital information was inconsistent and resulted in vital information often being missed by clinicians seeing the children. Children with risk factors were found to be frequently discharged from the service, not in-keeping with national guidance[7]. A number of records were seen where long term follow ups were specifically undertaken because of conditions such as post bacterial / viral meningitis, cleft lip or children with normal ABR testing at birth when this was not in line with national guidance[4]
- Scan quality of some external documents which have been added to the patient record are, in places, of extremely poor quality with key scanned documents being difficult to decipher and with poor contrast
- There were serious record keeping issues with the departments PCHI register, with over 25 children within the audit set who should have been on the register, not appearing

4. Attitude, Culture and Consistency of Management of the Child

The audit uncovered several concerning issues with the attitude and culture of the department. This included:

- There was no evidence of reflection upon care plans, testing performed and outcomes once a child was identified as having a hearing loss. In all the cases of missed / late identified hearing loss detailed within this report, the loss was documented and put down as ‘progressive’. This is despite evidence within the records that the child had referred the newborn hearing screen, had an ABR at birth which showed raised thresholds and often had

other behavioural tests where red flags for a hearing loss were ignored or highly unusual comments within the reports (such as 'responses to eye flicks')

- There was evidence that senior staff had, at some point, realised that normal behavioural testing results were being obtained in children that were significantly at odds with the ABR results obtained, but these red flags were dismissed. There was one particular report where the Head of Department, having obtained behavioural testing results at 14 months of age which, in their opinion, were within normal limits on a child where an air conduction ABR performed at birth had shown significantly raised thresholds in the presence of normal tympanometry had written: "explained to mum about the difference between the ABR results and our behavioural testing today. Advised we see this regularly where our behavioural is better than the ABR and we would keep them under review until 5 years of age to ensure the hearing loss does not return – for 12-month review". This is despite a clear red flag that the behavioural test may not have been accurate (absent DP OAEs in the presence of peaked tympanometry). The child went on to be 'diagnosed' aged 4 with hearing at levels consistent with that obtained at the ABR at birth and the hearing loss was recorded as progressive
- This lack of reflection was also evident in complaints handling. The audit identified a total of seven children where, once identified as having a hearing loss, the Cochlear Implant team had written back to the department to say the child would not be a candidate due to the delayed identification; one occasion where the National Deaf Childrens Society (NDCS) had contacted the health board due to concerns from a parent; one occasion where a private paediatric audiologist raised concerns about a child and three complaints from parents to the Health Board relating to late or misdiagnosis. In all these cases, the complaint or the enquiry was dismissed when it should have been clear upon reflection and review of the case that their audiological care had been mis-managed and action plans could have been put in place
- A number of patient reports were seen where the content and wording was dismissive, either of other professionals, parents or the child being tested. For example: 'xxx couldn't be bothered to play today', 'we told xxx that if he didn't want to play, he may as well go home', 'if xxxx doesn't want to use his sound ball, because he doesn't like it, we told mum there is nothing more we can do for his tinnitus'
- There was good evidence of an overreliance on parental perception of hearing ability. This was especially true where parents were not concerned regarding their child's hearing. This likely led to attitudinal and confirmation bias i.e. looking for evidence to support a diagnosis of hearing within normal limits, rather than trying to get to the true nature of the child's hearing ability by cross referencing objective and subjective tests. This can be seen both within the reports, for example, statements that 'the hearing loss identified today is unlikely to be threshold because of lack of parental concern' and in the discharge of children with risk factors for hearing loss (such as Trisomy-21) for parents to contact the service if they got any concerns against national advice and protocol
- There was no evidence of consistent audiological scientific application or knowledge to the test battery, i.e. the selection and performance of behavioural tests inappropriate to the child's developmental age without justification (and often excessive, such as the use of VRA on 4- to 7-year-olds without any documented developmental issues), was widespread, as

was the performance of otoacoustic emissions where flat tympanometry had already been recorded

- There was no evidence of a consistent management protocol or structure for children once results had been obtained. This resulted in children who presented with similar test results and history being managed in different and contrasting ways. For example, some children with flat tympanometry but normal behavioural testing were reviewed whilst others were discharged. Some children with behavioural results suggestive of a permanent hearing loss were referred into a multidisciplinary clinic for discussion, but some were listed for routine follow-up or sent to ENT for conductive loss management, despite no evidence of a conductive component
- There was no evidence of a consistent Did Not Attend (DNA) or safeguarding policy within the department with children with identical histories and results being treated differently. Within the audit set of 1,008 children, no child had a documented referral to safeguarding, despite several cases where this was required, such as disengagement with the service following hearing loss diagnosis

5. (Re)Habituation of children including Hyperacusis / Tinnitus Management of Children

Some good practice was identified in this area:

- Reports for older children were, on the whole, detailed and there appeared a very family centred approach to this part of the service, including the widespread use of age appropriate questionnaires, which should be commended
- Management for older children was, overall, consistent with and in-line with national guidance

Whilst in general, less significant issues were found with the hearing aid rehabilitation of children once identified and this part of the service appeared better run and more scientifically led, some issues with the hearing aid rehabilitation service were identified:

- For preschool children, there were several occasions where the child appears inappropriately aided, i.e. fitted with a hearing aid significantly less powerful than required for their hearing loss, without justification or explanation. This likely led to some children being significantly under-aided or not receiving the amplification they required
- There were isolated incidents of inappropriate hearing aid measurements being used, such as the use of Real Ear to Coupler Difference Measurements being performed on open fit hearing aids
- For unilateral hearing loss, the practice of performing aided, sound-field speech testing to show hearing aid benefit appeared widespread, despite this not being appropriate for this case load due to the normal hearing in the unaided ear
- There were some cases which raised safeguarding concerns where children with hearing aids did not attend (DNA) multiple hearing aid review appointments but there appeared to be no process in place to escalate their concerns

The service has a wide-ranging hyperacusis and tinnitus service, which appears to offer an extensive range of appointments to children with the condition. The department receives a significant number of referrals for this per year, often as part of an autism spectrum disorder pathway. On the whole, the suggestions to family on management and content of reports for this group were appropriate; however some concerns were raised with the model of the service:

- Following referral, the service routinely sent the families a letter with some coping strategies. This letter said that if the strategies had not helped, the family was to contact the department in 6 months. If the family did not contact the service, they were recorded as having received treatment and discharged. The service did not check the letter or strategies had been received and did not follow up unless the parents asked
- For families who did contact the service, whilst again, the advice given appears appropriate, a significant number of children (58) within the audit set were diagnosed with hyperacusis without any-form of audiological hearing assessment, missing any causative factors such as glue ear or PCHI
- On occasion the department gave sound balls to children to assist with hyperacusis and then told the parents to contact the department if they had any concerns, without offering any form of follow up. If, after 6 months, the family did not contact the service, they were assumed to have received appropriate treatment and discharged

Recommendations from the Audit

Urgent – to address immediately

1) Commence onsite visual reinforcement audiometry training, covering test technique with case studies incorporated for illustration
2) Commence training for 2 members of staff to perform ABR to BSA recommended procedures including for complex cases such as Auditory Neuropathy Spectrum Disorder (ANSD), Unilateral hearing loss and special cases
3) Commence training of the 2 members of staff in sharing the news with parents and appropriate ongoing management options for infants diagnosed at ABR
4) Establish audiological scientific knowledge and leadership skills in the leadership roles within the department, seconding to post if necessary. This will enable the staff undergoing VRA and ABR training to be supported and to embed this new practice across the department, ensuring that the incorrect practice does not continue

High – to be addressed within 12 weeks

5) Consider under duty of candour the need to communicate the findings of this report to the children and families identified within it
6) Consider the need to share this report with other health boards who refer children for paediatric audiology testing at NHS Lothian or where NHS Lothian paediatric audiology staff have conducted testing at their premises

7) Consider the need to share this report more widely, for greater professional learning both within Scotland and across the United Kingdom
8) Share the findings of this review within the multidisciplinary team at the Health Board to ensure clinicians are aware that there could 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
9) Implement theoretical and practical training for all staff covering:
    - The importance of following protocols and guidelines
    - Review of the evidence base to include:
        - Accuracy of parental reports of hearing ability
        - Test techniques to include scientific rational and understanding of child development
        - Effects of mild and high frequency ski slope losses
        - The impact of delayed diagnosis of permanent childhood hearing impairment
    - Test techniques
    - Test selection
    - Result integration and critical review
    - Management of inconclusive and complex patients
    - The importance of early cochlear implant referral
10) Implement training for staff undertaking regular hearing aid work on the selection and fitting of hearing aids to under 3-year-olds, including the use of RECD measurements
11) 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
12) Review management of the Newborn Hearing Screening Team to ensure the team are supported as needed
13) Improve administration systems to ensure that information from appointments is recorded contemporaneously in the Journal, using appropriate keywords; in the paediatric module where appropriate and is not confined solely to patient documents. Use of standard templates (Hotkeys) should be encouraged – there were a few examples of new to area information not being scanned as part of aetiology or previous audiometric work done or other professionals work like SLT, Education etc
14) Improve scanning of documents to ensure legibility
15) Begin to review the Newborn Hearing Screening records of all children for the last 3 years to ensure that those which have referred the screen have been offered an audiology diagnostic appointment. Where any are identified which have not, recall these for testing.
16) Establish or join an existing external ABR peer review network with ongoing support and advise for the professionals
17) Commission a review of the ABR recordings of all children seen by the service for ABR testing during the last 5 years, recall for behavioural testing those where significant concern is raised
18) Begin to recall children of clinical concern identified at the audit stage for retesting and management review
19) Begin to review children known to the service who have risk factors for hearing loss and recall these children in line with national guidance

20) Ensure that Stage A checks are being completed daily on equipment that is in use on that day and that these are documented, recorded and audited

Medium – to be addressed within 6 months

21) Review the long term structure of the department to ensure:
    - 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
    - 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.
    - Staff grading is reflective of the specialist roles and training
22) 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
23) Implement further training for staff in Clinical audit so they are able to support the quality assurance programme, and recognise the importance and benefits of accurate self-assessment
24) Implement further training for senior staff on critical appraisal and reflection, root cause analysis, action planning and investigation such that in the future issues should be identified and acted upon earlier
25) Review complaint management processes to consider:
    - Regular recording of all complaints received by the Paediatric Audiology Department, to include informal complaints
    - Monitoring of complaints at departmental level to look for patterns and themes, and agreeing appropriate action plans
26) Review use of hearing aids for trials and as loan aids in line with infection control guidance
27) Consider sending staff to observe other large paediatric audiology departments, with priority given to those with clear scientific leadership
28) Perform a full review into the hyperacusis and tinnitus service to ascertain the best management approach and that families are receiving the information provided
29) Review and update the PCHI record so that it is an accurate reflection of all children with hearing aids for a permanent childhood hearing impairment known to the department

Conclusion

The audit has identified widespread issues with the Paediatric Audiology service at NHS Lothian which has adversely affected the spoken language and life chances of a large number of children. These issues are widespread within the service and represent a significant failure of the Health Board to provide a safe, effective Paediatric Audiology Service.

References

1 Scottish Public Ombudsman Report – Case Reference 20191758 – Published 19/05/2021

2 Guidance for Auditory Brainstem Response testing in Babies – NHSP Clinical Group – Published April 2010

3 Guidance for Auditory Brainstem Response testing in Babies version 2.1 – NHSP Clinical Group – Published March 2013

4 Early audiological assessment and management of babies referred from the Newborn Hearing Screening Programme – NHSP Clinical Group – Published March 2013

5 Recommended Procedure for ABR testing in Babies – British Society of Audiology – 2019

6 Recommended Procedure for Visual Reinforcement Audiometry – British Society of Audiology – 2014

7 Basic medical surveillance essentials for people with Downs Syndrome – British Association of Audio-vestibular Physicians - 2000

Appendix A - Reviewers Form

Name:	
Email:	
Best contact number:	

Please click on checkboxes to indicate agreement/preferences. Leave blank if not applicable.

I have no current connection to NHS Lothian and I did not train there or work there in the past	☐
I hold current professional UK registration (ACHS / RCCP / HCPC)	☐
I am currently practicing in the field of Paediatric Audiology (or have been within the last 2 years) at a minimum of a Band 6 (AfC) with over 5 years experience in the role	☐
I agree to not discuss invidual patients or records I view / audit with anyone outside of the panel	☐
I would be happy to review cases from the following areas of Paediatric Audiology:	
Electrophysiological testing (ABR etc) Other Objective measurements (Reflexes, tympanometry, OAEs) Behavioural assessments of hearing in children under 3 Behavioural assessments of hearing in children over 3 Hearing aid management of children / infants	☐ ☐ ☐ ☐ ☐

Signed:	
Date:	

Appendix B – Trend analysis table

	Score												
Themes	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**N/A**	**Grand Total**
Count of ABR Recordings do not meet BSA Guidelines	1	23	6	2	15	5	11	6	30				99
Count of No BC ABR Recordings		22	5	2	7	2	4	2	2				46
Count of Inappropriate Aiding strategy		7	1	2	3	3	3	5	4	2			30
Count of Insufficient records available to assess fully	103	7	3	1	6	9	8	6	11	7	1		162
Count of Concerns over record keeping	103	18	5	2	13	26	33	27	52	49	3		331
Count of Concerns regarding safeguarding /DNA management	2	3	1	1	3	4	5	2	2	2			25
Count of Mastoidectomy		1	1	1	4	3	1		1	1	2		15
Count of No otoscopy noted		5	1	1	15	35	21	29	64	61	50		282
Count of Delayed CI Referral		10						1	1				12
Count of Hyperacusis pt with audio		1	2		3	10	11	16	25	4			72
Count of Hyperacusis pt with no audio	1				39	12	4	1	1				58
Count of NO CI Referral		4			1								5
Count of Delayed Offer/Fitting of Aids	1	34	4	3	12	3	10	5	6	4			82
Count of NO offer/fitting of hearing aids		4		1	1		2			1			9
Count of Concerns over validity of Behavioural test		33	7	3	25	22	26	21	25	11	1		174
Count of Delays on initial appt/review of patient		2	2		3	6	9	4	8	11			45
Count of OME/Glue Ear not managed appropriately		8	3	4	10	2	10	5	6	3			51
Count of Inappropriate patient management		28	5	1	16	8	19	12	4	6			99
Count of NO CM where needed		5		1	1		1						8
Count of Only Click ABR done		10	4	1	7	1	2	1	1		1		28
Count of Review ID	103	48	15	6	90	81	106	99	188	255	120	3	1114