Report on Quality Assuring the NBHSW Peer Review Process, 2012

Introduction

Peer reviews have taken place for all assessments completed following referral from Newborn Hearing Screening Wales since March 2007. An inter-divisional, All Wales, rotational allocation of peer reviewers has been running since June 2009. The process has evolved, following input from involved parties, and is now in a format which is user-friendly and efficient.

Audits in 2010 confirmed that peer review was taking place for all assessments, and further amended the process to include a maximum 28 day turnaround from completion of assessment to return of completed review (details available from the author on request).

Quality of the peer review process had not previously been audited and it was felt appropriate to carry out an audit of consistency between peer reviewers, as this is key to a robust and effective peer review process.

Methodology

Every individual carrying out peer reviews was to be audited, and this involved all 15 Audiologists who were working during the audit period which began on 1 April 2012 (a further two Audiologists were on maternity leave).

In order to streamline the process, and to minimize administration, sending of traces and completion of peer review electronically, was rolled out throughout the programme prior to commencing the audit.

A caseload of 5 assessments per peer reviewer was felt to make the audit manageable and also to enable completion within a reasonable timescale (3-4 months).

The process involved peer review of 5 assessments by each reviewer (allocated by current peer review rotation as of 1 April 2012), and additionally by a further three auditors allocated at random by the lead auditor (JH). Auditors were usually the three Divisional Audit Facilitators (DAFs) but additional auditors were needed when either the tester and/or allocated reviewer was a DAF.

On completion of each peer review, the peer reviewer/auditor completed a spreadsheet which was retained by that individual until the end of the audit period.

The process was carried out blind as there was no exchange of data between peer reviewer/auditors/Lead Auditor until data was requested, and collated, by the Lead Auditor at the end of the audit period.

See Appendix 1 for flow chart showing the pathway that was followed for the audit process.

Discrepancies Identified During the Audit Period

The allocated peer reviewer continued to follow the standard procedure returning completed peer reviews to tester and taking forward any discrepancies in the appropriate manner (see Peer Review Process document in Appendix 2).

Auditors were only expected to record their own peer review judgement, and not to interact with the tester/raise any queries or discrepancies. However, if a potential discrepancy arose in their review which may affect the management of a case, the individual was required to raise this with his/her Divisional Co-ordinator who would investigate further.

Data Analysis:

Analysis was based on the Peer Review Audit Form (see Appendix 3) with each of the following statements being considered:

- Suitable management plan in place based on an appropriate assessment of hearing status
- Correct test parameters used
- Frequency-specific air and bone conduction thresholds established as per Protocol
- Agreement between reviewer/audiologist analysis of traces? (significant discrepancy is ≥10dB difference in threshold)
- All traces and parameter summary provided. NHS number, DoB and initials only as identifiers. Waveform markers removed.
- Result record sheet correctly completed, including appropriate correction factor application
- Traces sent for review ≤14 days of last planned assessment date
- Discussion required
- Discussion resulting in change to plan

For each assessment, assessors (peer reviewer and auditors) completed either ‘yes’ or ‘no’ for each statement. Analysis was then made as to the amount of agreement between the assessors i.e. how many of a possible 4 gave the same answer.

Results

Data

106 babies completed assessment during the audit period and of these, the first 75 assessments were used for the peer reviewer audit, based on the first five completed assessments per reviewer.

Of the potential 75 assessments, 73 (97%) were reviewed by peer reviewer and three auditors, indicating excellent participation, and these 73 included in the analysis.

- *In 18 of the 73 assessments (25% of cases) the peer reviewer and all three auditors gave the same response for each of the nine statements ie. there was complete agreement*

Further analysis is given below for the 55 assessments where there was *not* agreement between the peer reviewer and/or every auditor for all nine statements. In order to identify themes, analysis is by statement on the peer review form and includes details of how many of the 4 assessors agreed/disagreed.

An attempt has been made to propose reasons why these disparities may have arisen and also steps that can be taken to improve consistency in the peer review process.

Analysis by Peer Review Statement

1. Suitable Management Plan in Place Based on An Appropriate Assessment of Hearing Status:

71 cases out of 73 (97%) had full consensus.
2 cases out of 73 (3%) did not have full consensus:

- Case 1:
  3 Assessors agreed 'yes' to the statement
  1 Assessors responded 'no' to the statement. He/she commented that air conduction threshold was probably present at lower levels and that more sweeps would have given more certainty.
  Further analysis of traces and discussion between Lead Auditor and DAFs indicated that better presentation of traces and averaging of traces to minimise noise, may have meant that there was no discrepancy reported.

- Case 2:
  3 Assessors agreed 'yes' to the statement
  1 Assessor responded 'no' to the statement. He/she felt traces from 1 ear may represent artefact (little decrease in amplitude and no clear latency shift)
  Further analysis of traces and discussion between Lead Auditor and DAFs still resulted in disparity in interpretation. Worst case scenario is that a unilateral hearing loss has been undetected.

Implications for Peer Review Process:

- *In the vast majority of cases, peer review has agreed that assessments have been appropriately performed and that suitable management plans have been put in place.*
- *Although the process works in flagging up discrepancies, there will always be some differences in opinion due to clinical judgement until analysis of waveforms becomes completely objective via software.*
- *Difference in expertise and experience will affect peer reviewer's judgement and will therefore, potentially result in some differences in peer review outcome in cases that are not clear cut.*

Learning points for Audiologists/Action Taken:

- *Update guidance on presentation of traces, including averaging of responses.*

- *Ensure that peer reviewers recognise that this statement can only be a ‘yes’ if **both** an ‘appropriate assessment of hearing status’ has been performed **and** a suitable management plan is in place.*

2. Correct Test Parameters Used:

All 4 assessors ‘yes’ = 25 cases (34%)

3 ‘yes’ and 1 ‘no’= 14 cases

2 ‘yes’ and 2 ‘no’ = 30 cases

1 ‘yes’ and 4 ‘no’ = 4 cases

Reported discrepancies:

	Sweeps	Blocking	CM Parameters	Points	Rate	Not Stated
No of Assessments	42	15	1	1	2	2

<u>*Implications for Peer Review Process:*</u>

- *Audiologists must ensure that equipment is set to current guidance.*
- *The recommended 2000 sweeps were not always collected.*
- *There was disparity between peer reviewers in whether or not they reported the lack of 2000 sweep collection and this accounted for the largest number of discrepancies.*

Learning points for Audiologists/Action Taken:

- *Re-circulate equipment parameters and advise Audiologists to regularly check their equipment against those published on NHSP website.*
- *Discussion and presentations at All-Wales NBHSW Audiologists’ meeting with regard to numbers of sweeps, following correspondence with Guy Lightfoot and John Stevens. Interim guidance from NBHSW, as of November 2012, permits a minimum 1500 sweeps providing 3:1 SNR and amplitude requirements are met. Assessments not meeting 1500 sweeps should be reported as a discrepancy.*

3. Frequency-Specific Air and Bone Conduction Thresholds Established as Per Protocol

All 4 assessors ‘yes’ = 67 cases (92%)

3 assessors ‘yes’, 1 assessor ‘no’ = 4 cases

2 assessors ‘yes’, 2 assessors ‘no’ = 2 cases

Gold standard not met	3 *
Disagreement on threshold analysis	1
No BC on left and no reason given	1
Click and CM test should have been done	1*

*picked up by 2 auditors on same assessment

<u>*Implications for Peer Review Process:*</u>

- *There was generally very good agreement in responses from peer reviewers*
- *Difference in expertise and experience will affect peer reviewer's judgement and will therefore, potentially result in some differences in peer review outcome in cases that are not clear cut.*
- *Audiologists need to be reminded that in cases of severe-profound losses, CM testing **must** be carried out, even if there are no particular risk factors for ANSD*
- *Audiologists and peer reviewers to be reminded that 'gold standard'* ***must*** be met.
- *Peer Reviewers also need to be looking at the assessment and be aware when ANSD testing should be performed*

Learning points for Audiologists/Action Taken:

- *Forward revised ANSD protocol and ensure updates are circulated from NHSP websites*
- *Send reminder re 'gold standard' requirements for both tester and peer reviewer*

4. Agreement between reviewer/audiologist analysis of traces? (significant discrepancy is ≥10 dB difference in threshold)

All 4 assessors 'yes' = 67 cases (92%)

3 assessors 'yes', 1 assessor 'no' = 2 cases

2assessors 'yes', 2 assessors 'no' = 4 cases (both gave same comments)

1kHz should be <= as not tested below	1
10 dB higher than stated	2
May be artefact	1
May be 10 dB lower	2*

*Auditor commented that more sweeps may have helped clarify if lower level was a CR or RA (instead of inc)

<u>Implications for Peer Review Process:</u>

- *There was generally very good agreement in responses from peer reviewers*
- *Difference in expertise and experience will affect peer reviewers' judgement and will therefore, potentially result in some differences in peer review outcome in cases that are not clear cut.*
- *A more standardised presentation of traces, in particular, averaging of responses, may aid in consistency of interpretation*

Learning points for Audiologists/Action Taken:

- *Guidance written and circulated with regards to standardising presentation of traces*

5. All traces and parameter summary provided. NHS number, DoB and initials only as identifiers. Waveform markers removed.

All 4 assessors 'yes' = 66 cases (91%)

3 assessors 'yes', 1 assessor 'no' = 5 cases

2 assessors 'yes', 2 assessors 'no' = 2 cases

<u>Implications for Peer Review Process:</u>

- *Generally there was good consistency between peer reviewers/auditors.*
- *Peer reviewers need to be vigilant in paying attention to all aspects of the paperwork.*
- *Testers need to ensure that paperwork is appropriately completed/presented*

Learning points for Audiologists/Action Taken:

- *Guidance written and circulated with regards to standardising presentation waveforms.*

6. Result record sheet correctly completed, including appropriate correction factor application

All 4 assessors ‘yes’ = 55 cases (75%)

3 assessors ‘yes’, 1 assessor ‘no’ = 14 cases

2 assessors ‘yes’, 2 assessors ‘no’ = 4 cases

Date sent for review incorrect	2
1st freq not labelled	1
Tymp results from another baby	1
Table correct but summary L/R wrong way round	1
Transducer not stated in table	1
No conclusion on results/summary of findings	5

Implications for Peer Review Process:

- *Relatively poor consistency between peer reviewers/auditors and this may be due to the high volume of traces being analysed by the auditors. Errors may have arisen in detecting problems with paperwork, resulting in more inconsistencies than would be expected during the usual peer review process.*
- *Although some ‘minor’ problems were picked up e.g. date sent for review incorrect, some more significant problems such as results being attached for a different baby and summary being incorrect indicate that peer reviewing is an important process and helps quality assure the programme. It also provides a useful double check for testers.*
- *Peer reviewers need to be vigilant in paying attention to all aspects of the paperwork.*

Learning points for Audiologists/Action Taken:

- *Audiologists to take care and check paperwork before sending for review*
- *Peer reviewers to be vigilant in paying attention to all aspects of the paperwork*
- *Reminder to all Audiologists that a conclusion/summary* ***must*** *be provided for each completed assessment.*

7. Traces sent for review ≤14 days of last planned assessment date

All 4 assessors 'yes' = 70 cases (96%)

3 assessors 'yes', 1 assessor 'no' = 1 case

2 assessors 'yes', 2 assessors 'no' = 1 case

1 assessor 'yes', 4 assessors 'no' = 1 case

Implications for Peer Review Process:

- *Excellent consistency between peer reviewers.*
- *Encouraging to note that nearly all assessments were being sent within 14 days, as per protocol.*

Learning points to Audiologists/Action Taken:

- *Peer reviewers to be vigilant in paying attention to all aspects of the paperwork*

8. Discussion Required

All 4 assessors 'no' = 61 cases (84%)

2 assessors 'no', 2 assessors 'yes' = 4 cases

1 assessor 'no', 3 assessors 'yes' = 8 cases

In 4 cases, the peer reviewer wanted discussion.
In 1 case peer reviewer and 1 Auditor.
In 3 cases 2 x Auditor.
All others were individual auditors who wanted discussion.

Implications for Peer Review Process:

- *Good consistency between peer reviewers.*
- *Individual preference/experience of the peer reviewer will play a part in whether further information/discussion is needed. Reason for discussion being required was not recorded on the form so it was not possible to further analyse this.*
- *The relatively low numbers of assessments requiring further discussion suggests that most assessments were clear cut in terms of peer reviewing*

9. Discussion Resulting in Change to Plan

Could not analyse this as part of audit but of the 73 traces 1 had a 'yes' in this section – but nothing flagged up in rest of peer review, therefore, assume that it was recorded incorrectly on review sheet

Key Point Summary:

1. There is generally very good consistency between peer reviewers, indicating that the peer review process is robust.

2. Whilst it is acknowledged that experience and clinical judgement will influence interpretation of test results/conclusions drawn, as a result of this audit further steps have been taken to try and minimise inconsistencies that may arise between peer reviewers, for example:
    a. standardising presentation of traces
    b. re-circulating test protocols to Audiologists and peer reviewers
    c. providing specific peer review guidance, which will also act as a guide for new reviewers

3. Peer reviewers to be reminded to allocate sufficient time to effectively perform peer review, as some of the inconsistencies were due to overlooking finer points on the Results Record Sheet/traces, possibly due to this being done relatively quickly.

Conclusion:

The audit confirmed that the peer review process is robust. A number of issues were identified, and steps put in place to further improve consistency between auditors and strengthen the peer review process. Further audit would be recommended to determine whether there is better consistency following implementation of these steps.

A welcome by-product of the audit has been the mandatory implementation of electronic peer reviewing throughout Wales, which has made the whole process quicker. This also minimised the impact of the audit process for testers.

The workload was very onerous for the three main auditors, and if further audit were to be carried out, it would be suggested that numbers were reduced to three cases per peer reviewer and that the audit role was spread evenly between all other Audiologists rather than being restricted to key auditors.

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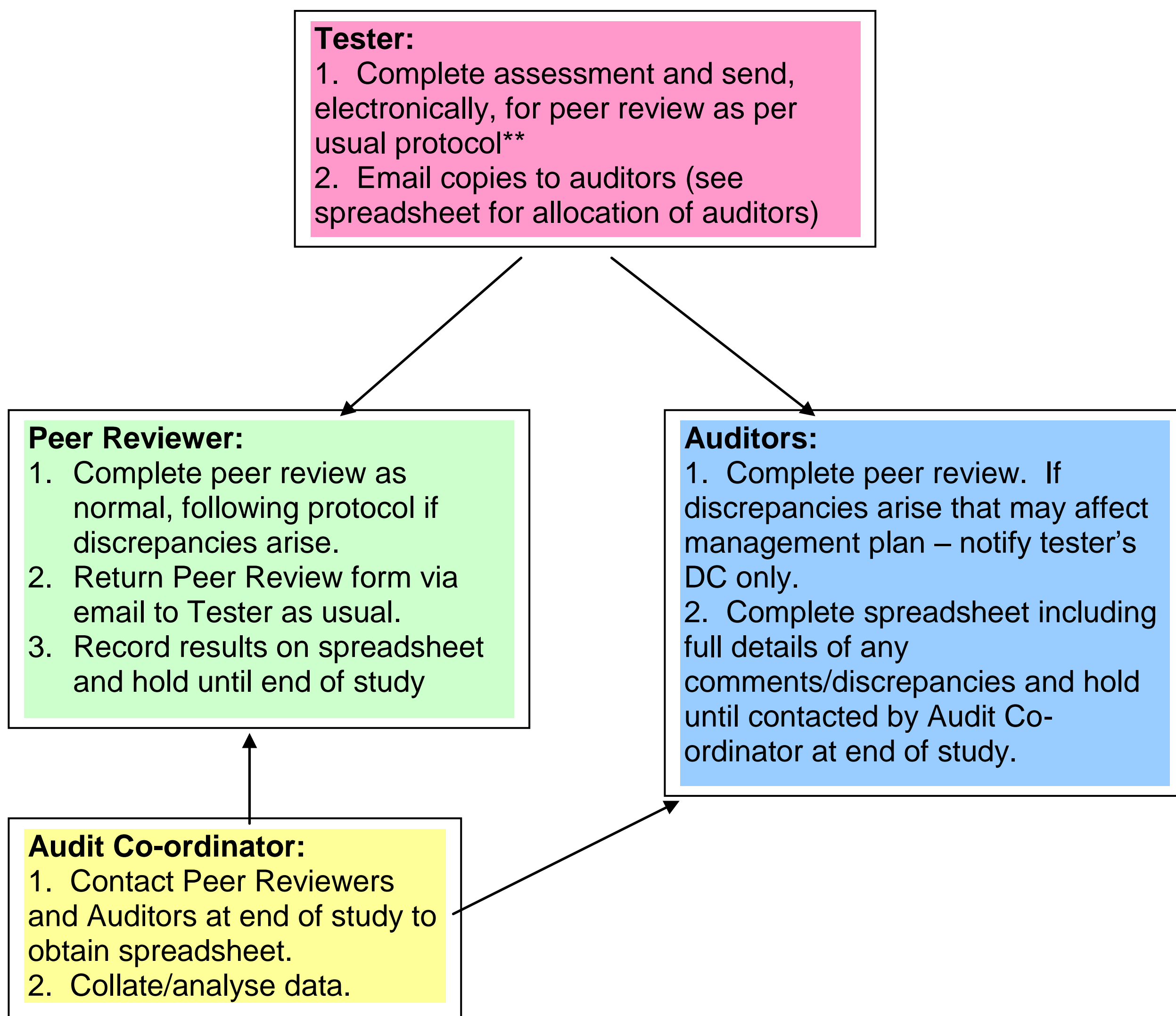
November 2013

Appendix 1 **Quality Assuring the NBHSW Peer Review Audit Flow Chart**



** or as per spreadsheet for sites requested to send additional cases

Appendix 2 Quality Assuring the NBHSW Peer Review Process Document

Background

All assessments undertaken as part of NBHSW have been peer reviewed on an All-Wales basis since June 2009. The process has evolved, following input from involved parties, and is now in a format which is user-friendly and efficient.

In order to ensure quality of the peer review, it was felt appropriate to carry out an audit of consistency between peer reviewers, as this is key to a robust and effective process.

Methodology

All individuals carrying out peer reviews will need to be audited, this involves all 15 Audiologists who are currently working (two other Audiologists are on maternity leave).

In order to streamline the process, and to minimize administration, all traces and reviews will be completed electronically, and therefore, the start date is dependent upon all sites being in a position to do this, but is potentially 1 April 2012.

The DAFs have offered to act as additional peer review auditors (in order to compare results of the peer reviewer against others), but additional reviewers will be needed where either the tester, or allocated reviewer, is a DAF.

A caseload of 5 assessments was felt to make the audit manageable and also to enable completion within a reasonable timescale (3-4 months). It was acknowledged that some reviewers will not receive this number of assessments during an acceptable timeframe, and therefore, some sites with higher throughput will be asked to provide additional assessments to reviewers.

The flow chart attached, identifies the pathway that should be followed for the audit process (see Appendix A of main document).

The table below identifies the allocation of reviewers and is based on the current peer review rotation. It has been agreed with Dr Amanda Roberts, who initiates changes in rotation, that the current allocation will stay in place until the end of the audit period to make administration easier.

The lead auditor (JH) will collate all data at the end of the audit period. During the audit period none of the reviewers will have access to the results of any other reviewers.

Tester	Number to send for audit	Peer Reviewer	Additionally send to JH	MD	ST	Other	Other
JH	5	JE	X	√	√	SM	X
JH	5	RM	X	√	√	TH	X
JW	5	TH	√	√	√	X	X
TH	5	MD	√	X	√	DM	X
SM	5	JE	√	√	√	X	X
AT	5	D H-G	√	√	√	X	X
ABMU	5	JW	√	√	√*	**JD	X
PR	5	SM	√	√	√	X	X
DM	5	RM	√	√	√	X	X
JW***	5	ST	√	√	X	RM	X
SM***	3	MH	√	√	√	X	X
AT***	2	MH	√	√	√	X	X
SM***	2	PR	√	√	√	X	X
AT***	3	PR	√	√	√	X	X
MD (BCU East)	2	DM	√	X	√	AT	X
JD	3	DM	√	√	√	X	X
MD (BCU Central)	3	JH	X	X	√	JW	MH
D H-G	2	JH	X	√	√	RM	X
JE	3	AT	√	√	√	X	X
RM	2	AT	√	√	√	X	X

Notes for Testers:
*unless tester is ST
**if tester is ST
***once first 5 assessments have been sent for audit purposes, please send next as per spreadsheet

Once required number have been sent for auditing purposes, please return to normal peer review rotation and practise

Analysis of Data

At the end of the audit period, JH will request data from all peer reviewers and auditors and will make a comparison of the results obtained for the reviewer/auditors for each assessment.

Results will be presented at the Audiologists Meeting to be held later in 2012.

Appendix 3 **NBHSW DIAGNOSTIC ASSESSMENT PEER REVIEW AUDIT FORM**

Number of Review (Allocated by Reviewer) ………………………….

NHS Number ………………………… **Date of Birth** ...…………….. **Initials** ..…………

Reviewer must make decision on threshold before looking at trace summary sheet

Suitable management plan in place based on appropriate assessment of hearing status	Yes/No
1 Correct test parameter used	Yes/ No
2 Frequency-specific air and bone conduction thresholds established as per protocol	Yes/No
3 Agreement between reviewer/audiologist analysis of traces? (significant discrepancy is ≥10 dB difference in threshold)	Yes/No
4 All traces and parameter summary provided. NHS number, DoB and initial only as identifiers. Waveform markers removed	Yes/No
5 Result record sheet correctly completed, including appropriate correction factor application	Yes/No
6 Traces sent for review ≤14 days of last planned assessment date*	Yes/No
7 Peer review completed and result returned ≤28 days after last planned assessment date*	Yes/No
8 Discussion required	Yes/No
9 Discussion resulting in change to plan	Yes/No

*where date not provided on results record sheet, sent date will be considered to be the date received by peer reviewer

If any of 1-7 are answered 'no', or there are any comments regarding discussion/management plan – give details below

………

………

………

Actions	
Feedback to Audiologist (all assessments)	Yes/No
Feedback to Audiologist and Divisional Co-ordinator if any discrepancy	Yes/No/NA
For discrepancies, copy of traces and review to Divisional Audit Facilitator (Audiologist's name to be removed)	Yes/No/NA

Name of Reviewer: ………………………………………………………………..

Date Review Completed and Sent Back: …………………………………………………………..