BRITISH ACADEMY
OF AUDIOLOGY
Higher Training Scheme

British Academy of Audiology

Higher Training Scheme (HTS) Module Specification: Paediatric Assessment (newborn)

Purpose of this specification

This document makes explicit the knowledge and skills that are expected from an HTS candidate relevant to the scope of this module, and outlines additional elements needed to be completed prior to examination, such as secondments and case studies. All the prescribed elements of the module must be completed prior to application for the final examination.

It is important that this document is read together with the HTS regulations which clarifies requirements and gives further guidance.

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1.0 Scope of this Module

This module relates to M-level clinical training to develop practical skills to enable competency in the assessment of babies and children requiring objective assessment and peer review of cases. The module covers Auditory brainstem Evoked Response, Oto-Acoustic Emissions and tympanometry specifically although knowledge of other electrophysiological testing techniques is required.

Typical cases for assessment or peer review will be those referred from the newborn hearing screen which will include both bilateral and unilateral No Clear Responses (NCR) as well as appropriate cases from those exempt from the newborn screen e.g. babies with a diagnosis of microtia / external ear atresia, bacterial meningitis / meningococcal septicaemia or confirmed congenital cytomegalovirus (cCMV) that do not present with likely complicating factors. Other cases for assessment might include older babies following bacterial meningitis/meningococcal septicaemia, interim testing (e.g. at 4 months) for those at risk of progressive hearing loss, testing children suspected of auditory neuropathy spectrum disorder (ANSD) or non-organic hearing loss (NOHL) and any child who is not developmentally suitable for behavioural testing or where behavioural testing has not been successful.

Testing will usually occur under natural sleep within the department but may also take place under natural sleep at home or on a ward, under sedation or under general anaesthetic within an operating theatre environment.

Candidates are not expected to be competent in leading the assessment of cases where there are other significant disabilities or disorders that would provide major challenges to assessment (e.g., presence of hydrocephalus). Although candidates are not expected to assess cases with more complex needs, they are expected to be able to manage these cases appropriately should they present in a clinic, for example by referring on as needed. Candidates are expected to be familiar with assessment options and referral routes for such cases so they can advise parents and carers appropriately and answer routine questions.

While experience of testing and diagnosis of bilateral PCHI is ideal, it is not mandatory that a candidate is lead clinician for such cases and assistance from a more senior member of staff in such cases can be sought. As such, there is not a requirement for the candidate to have experience and demonstrate skills in bilateral PCHI diagnosis giving, but there is the expectation that the candidate will have at least covered this in theory and role play and be able to manage such a situation appropriately, should it arise.

The peer review element to this module is designed to enable candidates to become adept at critiquing other results so they build on their knowledge and develop their own testing strategy to stand up to the rigours of peer review. Please note that this module does not lead to formal accreditation in this area.

2.0 Minimum requirements for this module

This module requires candidates to have existing skills and knowledge equivalent to that of a BSc in Audiology.
The detailed minimum requirements for completion, prior to examination are summarised in the following table. However, it should be noted this is a minimum requirement only and reflects candidates who have already had significant experience in paediatric testing, prior to commencing formal training. Candidates newer to paediatric testing will require more experience or training than this to enable them to meet the examination standard, and a recommendation for those starting from scratch is also detailed in the table. It is the responsibility of the accredited supervisor to make sure that the candidate has had sufficient training and experience before sitting their exam, to optimise their chances of success. The guidance notes should be followed, any experience which does not comply with this guidance cannot be counted towards the minimum requirements.

Element	**Minimum**	**Recommended number for candidates new to paediatric testing**
M-level credits	10 credits	10 credits
Total supervised clinical sessions *	5	15
Tutorials	2	3
Secondment sessions*	1	2 (or 1 day)
Placement sessions	No minimum number	No minimum number
Procedural Skills	All signed off	All signed off
Competency Assessments - periodic appraisals of whole patient management and reflections.	3 appraisals in each category **	5 appraisals in each category **
Case Studies	1	1
Calibration practical sessions	No minimum	1

* A session is a whole clinic, to include preparation, seeing patients and any subsequent record and report writing.
** for the peer review cases, there must be a minimum of **three** cases of each type (discharge and non-discharge) appraised to be at examination standard.

3.0 Theoretical knowledge

The candidate is expected to gain the following theoretical knowledge through academic study, tutorials, self-study and discussion:

1. Knowledge of child development to include physical, cognitive and communication aspects to enable recognition of when development may not be following a typical path or timeline, such that onward referral may be appropriate.
2. To be able to contextualise childhood hearing loss from the socio-emotional, educational and medical perspective, to include:
    a. knowledge of epidemiology, aetiology and risk factors
    b. embryology and neuromaturation of hearing

    c. genomics related to hearing loss and genetic counselling
    d. the impact of childhood hearing loss on family and on child development
    e. the importance of timely hearing assessment and its link to speech and language development
3. Critically evaluate the evidence relevant to benefit from early intervention for permanent hearing loss in children
4. Critically evaluate the evidence relevant to the effects, management and outcomes for children with temporary hearing loss
5. Appraise policies and guidelines, position statements and best practice with regard to child health and hearing including understanding of the principles and practice of surveillance and newborn hearing screening programmes and knowledge of national guidelines and recommended procedures that govern peer review and testing of babies and children
6. Knowledge of stage B calibration procedures for all equipment used in paediatric objective testing, with detailed knowledge of evoked response audiometry calibration
7. Content of a full and relevant history (including medical, developmental, and family aspects)
8. Integrative understanding of child maturation and development to choosing, interpreting and synthesizing different hearing assessment techniques in children
9. Knowledge of the different types of objective and behavioural assessment tests available for testing children, including their application at each stage of development
10. Detailed knowledge of objective hearing assessment techniques for babies and children
11. Understanding of the factors that contribute to successful objective hearing assessment of a child including accuracy, sensitivity, reliability and the scientific evidence underlying paediatric assessment methods
12. Knowledge of and ability to reflect upon the evidence and value of holistic, family-centred, and transdisciplinary care in paediatric audiology including informed choice, joint working, shared decision making and safeguarding, as well as sources of support
13. Knowledge of and the ability to critically evaluate the evidence for diagnostic, management and support approaches in a variety of paediatric conditions within and related to audiology e.g PCHI, OME, ANSD, APD
14. Knowledge of the national minimum discharge guidelines and application within the clinical environment
15. Knowledge of safeguarding to include types of abuse, risk factors and local procedures, should any concern arise
16. Awareness of communication strategies and appropriate language when working with children and their families / carers
17. Knowledge of risk factors and preventative measures, and appropriate public health messages with regard to hearing loss prevention
18. How to integrate relevant information to make a shared informed decision concerning the diagnosis and management of individual cases
19. Awareness and ability to including inform parents/carers that the cases are to be peer reviewed in a way that doesn't worry parents or raises concerns about the test results
20. Understand their own role and those of other professionals (e.g. Teachers of the Deaf/educational audiologists, speech and language therapist, paediatrician) and agencies who contribute to the management and welfare of the child and their family / carers, and local referral routes

4.0 Learning outcomes

On completion of the module the candidate should integrate theoretical knowledge and practical skills to enable them to:

1. Prepare test facilities & equipment, to include daily calibration checks and room set up
2. Formulate assessment plans, liaising with the relevant professionals to co-ordinate assessments & care, as appropriate
3. Plan clinical approaches, using clinical reasoning strategies, evidence-based practice
4. Take a full and relevant history

5. Carry out testing in a safe and effective manner adapting as required to ensure information gained is maximised within the time available
6. Show creativity, initiative and originality of thinking in tackling and solving practical problems
7. Record and collate relevant information, interpret and make an informed decision concerning the diagnosis and management of individual cases
8. Ensure that parents / carers are part of the decision making with use of person-centred care
9. Ensure any concerns regarding safeguarding are recorded appropriately and are acted on, adhering to local protocol
10. Keep parent/carers and patients fully informed during all aspects of the appointment, obtaining consent for procedures as appropriate
11. 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
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
13. Keep appropriate clinical records
14. Write reports on test results and recommendations suitable for the intended audience, to include a range of professionals and parents/carers
15. Relate own practice to a supporting knowledge base, to include local and national guidance, processes and structures.
16. Justify own clinical decisions made in the assessment or management of patients
17. Critically evaluate and reflect on own actions, showing independent thought through alternative (and justified) approaches to existing local practice

In this module the above overarching learning outcomes will apply to the indicative content outlined in Section 5.0. These learning outcomes are used to assess competency in the appraisals and examination.

5.0 The range of procedures in which competence is expected

1. Preparation for appointment to include preparation of clinical facilities & equipment, to include daily calibration checks of tympanometers, OAE equipment and evoked response testing equipment, and room set up
2. Independently and succinctly obtain a relevant case history about the child in a logical but flexible progression, and
    a. Identify possible aetiological or contributing factors as they arise and spontaneously probe for more relevant information
    b. Show sensitivity to the parent/carer's concerns both in questioning and information giving
    c. Record relevant information whilst maintaining a rapport with the parent/carer and being aware of their concerns
    d. Cover the main areas defined below, unless justifiably omitted
        i. What understanding the parents have regarding results obtained so far e.g. newborn hearing screen, previous diagnostic appointments
        ii. Pregnancy and birth history, neonatal and postnatal history and treatments (including serious illnesses, head injuries, presence of PVP shunts)
        iii. Any relevant ENT history
        iv. Family history of hearing impairment or disorders/syndromes associated with hearing impairment. This may include exploration of potential consanguinity in parents

v. Involvement of other professional agencies
vi. Establishing any new information since the last appointment, if appropriate

3. OAEs to include:
    a. Placement of probe
    b. Choice and type of emission
    c. Parameters and pass criterion
    d. Interpretation of results
4. Threshold auditory brainstem response testing using both air and bone conduction to include:
    a. Transducer selection
    b. Test parameters, and how these could be adapted to maximise results in the time available / conditions
    c. Use of different stimuli e.g. click, tone-pip and chirps
    d. Use of masking
    e. Problem solving, in particular with regard to interference
    f. Interpretation of results (including use of correction factors and patients with hearing losses as well as normal hearing)
5. Cochlear microphonics to include:
    a. Test parameters
    b. Interpretation of results
6. High frequency tympanometry to include:
    a. positioning of the child
    b. Interpretation of results
7. Peer review of newborn assessment cases, to include:
    a. Local external and internal peer review protocols
    b. Criterion to assess against
    c. Use of improvement indicators
8. Debrief to child / parents / carers to include:
    a. Explaining results, implications for communication and proposed management using appropriate language
    b. Responding to questions from parents/carers in an appropriate way, showing sensitivity and rephrasing /re-explaining as necessary to ensure understanding
    c. Backing up information given with information materials for parent/child where possible
    d. Using appropriate methods to break difficult news to parents /carers (using role play if situation does not arise in practice)
    e. Involving child in debrief, as appropriate
9. Keep appropriate clinical records: record findings and interventions delivered clearly, in a consistent format, all of which must be dated and named
10. Write reports on assessment sessions, recommended treatment plans and / or outcome of treatment as required, suitable for the intended audience, to include a range of professionals

6.0 Types of cases for periodic appraisals of whole patient management

The specified case types for this module are given below:

- Clinical assessment of case with satisfactory hearing bilaterally
- Clinical assessment of case without satisfactory hearing bilaterally
- Peer review of discharge case
- Peer review of non-discharge case

Cases will be assessed against the same criteria as the examination marking guidance. It is recognised that in the case of clinical assessment, the category into which the patient falls cannot be determined until the assessment is complete.

Although peer reviews are not examined externally, it is expected that appraisals will be marked against the same guidance although note that **only** learning outcome 12 applies to these appraisals. Peer reviews should ideally be completed on those sent in by an area group or can be completed on in-house assessments by other staff members. Cases should be selected to include challenging issues including masking and cochlear microphonic testing. Referring to the BSA Principles of external ABR peer review, the peer review training must be overseen and signed off by someone who has been approved as a reviewer by the local area peer review group (they do not need to have completed a formal accreditation course if this is not a requirement of the local group but, as a minimum, should be a registered professional who participates in CPD related to electrophysiological assessment). In most cases, this is expected to be the main supervisor for this module. If there is no local ABR peer review group for this department, it is still possible to complete this section although the supervisor should be of equivalent experience in training and ERA work.

7.0 Examination details

Greater detail is given in section 12 of the handbook and should be referred to when planning all exams. Examination will take place over a maximum of a one-day period at the candidate's training centre, assessing the candidate against the learning outcomes for this module. This examination has three components:

- **Practical assessment of clinical skills.**

This will involve the direct observation of the candidate in one appointment involving auditory brainstem response testing. As in the case of all HTS exams, it is expected that a backup patient is booked. It is recognised that this is difficult for this module due to the unpredictable nature of referrals, but it is suggested that cases are prioritised into the examination clinics as soon as this date falls within the time frame that they must be seen by. The back up patient should be booked at a time appropriate to what the department can accommodate e.g. if equipment/staffing means that only one child can be seen at one time, then it must be booked to follow the main case. Sometimes patients in this module category do not sleep well enough for testing. Assuming that examiners have seen evidence of communication and problem solving, as well as the preparation of the patient, then the assessment of the actual testing can be conducted using a staged scenario where candidates must discuss what they would do next and interpret traces. If both patients do not attend, then the examination will need to be rescheduled. Candidates can use the time available to achieve testing and up to 3 hours would be considered fair if the child is unsettled, although the back-up patient will need to be booked so as to minimise waiting around. An exampled timetable is given below although timings may vary depending on examiner, room and staff availability.

Time (approx.)	
08:30- 09:00	Examiners review patient suitability and general facilities
09:00– 09:15	Briefing by examiners
Plan A	
09:15- 12:45	Main Case and viva
12:45-13:45	Candidate writes report / lunch
13.45 - 14:15	Examiners review report and final discussions (with candidate if required)
14:15 – 14:30	Feedback to candidate
Plan B	
09:15 – 10:00	Main Case – Unsuitable or WNB
10:00 – 13:30	Back-up Case and viva
13:30 – 14:30	Candidate writes report/lunch
14:30-15:00	Examiners review report and final discussions (with candidate if required)
15:00-15:15	Feedback to candidate

- **Case Viva**

The case viva element will include assessment of the level and scope of theoretical knowledge underpinning the learning outcomes. This may explore broader issues prompted by the practical exams e.g essential elements not covered in the practical exam and the content of this module and may include peer review /interpretation of selected traces.

- **Clinical report**

The report on any new case should include the following discrete sections: history, summary of findings, interventions delivered and individual management plan.

8.0 Examination marking guidance

	Learning outcome	0 Does not meet examination standard	1 Meets examination standard	2 Exceeds examination 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 in a safe and effective manner adapting as required to ensure testing 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	Record and collate relevant information, interpret and make an informed decision concerning the diagnosis and management of individual cases. 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
	Learning outcomes	0 Does not meet examination standard	1 Meets examination standard	2 Exceeds examination 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 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	Communicates relevant information about testing and management options to parents / carers clearly and in a way that broadly meets their needs	Effectively and clearly communicates relevant information about testing and management options to parents / carers in a way that is highly tailored to their needs
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

15, 16, 17	Relate own practice to a supporting knowledge base, to include local and national guidance, processes and structures. Justify own clinical decisions made in the assessment or management of patients Critically evaluate and reflect on own actions, showing independent thought through 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	Able to reflect on and critically evaluate own clinical practice, and explain clinical reasoning Demonstrates comprehensive knowledge of subjects discussed	Able to provide insightful reflection and critical evaluation of own clinical practice, and explain clinical reasoning with reference to research evidence and clinical practice Demonstrates a wider knowledge of subjects discussed

Candidates must achieve a final rating of 1 or 2 in every section of the examination to achieve a pass.

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