

IMPORTANT NOTE

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Newborn hearing screening - NICU or SCBU protocol

Paediatrics > Screening > Newborn hearing screening

1 Newborn hearing screening NICU/SCBU protocol

Quick info:

Scope:

- this pathway covers neonatal intensive care unit or special care baby unit (NICU or SCBU) protocol screening for hearing impairment in newborn babies
- it summarises guidelines developed by the NHS Newborn Hearing Screening Programme (NHSP) in England; more information about NHSP and supporting materials for these pathways can be found on the NHSP website

Key points:

- screening tests used are:
 - automated oto-acoustic emission (AOAE)
 - automated auditory brainstem response (AABR)
- both AOAE and AABR must be performed on both ears, order of testing is discretionary (but is illustrated in this care pathway in the usual manner of AOAE first)
- in hospital based services, screening in NICU is performed by one of the hearing screeners; in community based services screening in NICU may be performed by various people, including trained NICU nurses

Timing:

- ideally complete screening as close to discharge as possible while the baby is in hospital
- wherever possible, baby should be well and any major medical or drug treatment completed
- if the process is not completed in hospital, an outpatient or clinic appointment or home visit is required to complete the process, usually within one visit
- aim to complete screening by 44 weeks gestational age (4 weeks corrected age)
- screening should not be performed on babies less than 34 weeks gestational age

3 Automated oto-acoustic emission (AOAE) screening test

Quick info:

- unlike in the well baby protocol, only one automated oto-acoustic emission (AOAE) attempt is carried out
- attempt the test in both ears unless considered inappropriate

5 Automated auditory brainstem response (AABR) screening test

Quick info:

- attempt the test in both ears unless baby has a skin condition which makes it medically inadvisable to attach electrodes

9 Consider referral for early audiological assessment

Quick info:

- referral for audiological assessment should be made immediately
- aim to start the assessment process within 4 weeks of screen completion
- the assessment care pathway is detailed in the MRC Hearing and Communication Group website
- the assessment will generally include ABR and should be at the specialist centre where there are full audiology facilities, not at 'tier 2' or intermediate or community audiology clinics

21 Consider referral for audiological assessment

Quick info:

- in most cases the referral will be at age 7-12 months for behavioural testing
- in the event of parental or professional concern, an earlier appointment may be required, using whatever methods are appropriate and possible

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23 If risks are present, consider referral for audiological assessment

Quick info:

- in most cases the referral will be at age 7-12 months for behavioural testing
- in the event of parental or professional concern, an earlier appointment may be required, using whatever methods are appropriate and possible

24 If absent, discharge (with ongoing vigilance)

Quick info:

No further follow-up is formally required but services should be responsive to any parental or professional concern about hearing and be able to offer appointment for audiological assessment at any age.

Ongoing vigilance:

- some babies may develop problems which may affect hearing after the screen or other risk factors may come to light – such babies should be referred to audiology for an age appropriate assessment
- bacterial meningitis and temporal bone fracture:
 - if these conditions occur at any point in infancy or childhood after the screen then, on recovery, immediate referral should be made to audiology for an age appropriate audiological assessment within 4 weeks of discharge from hospital

Parental or professional concern:

- parental concern about an infant's hearing, development of auditory or vocal behaviour should always be taken seriously
- all professionals who may be in contact with a child should feel able to refer to audiology if there is parental concern, or if they themselves are concerned
- these children should be offered a hearing assessment as soon as possible carried out by an appropriately trained team

27 Offer appointment to complete screen or consider referral, as appropriate

Quick info:

NHSP policy for missed and incomplete screens is that:

- babies under age 3 months (corrected age) should be offered an appointment to complete the screen from whichever stage (AOAE or AABR) had been previously reached
- babies over age 3 months should be considered for referral to audiology at an appropriate age
 - in most cases the referral will be at age 7-12 months for behavioural testing
 - in the event of parental or professional concern, an earlier appointment may be required, using whatever methods are appropriate and possible

NB: This policy may be interpreted flexibly according to the individual clinical and other circumstances.

22 Other risks requiring surveillance?

Quick info:

The following risks require surveillance:

- parental or professional concern about the infant's hearing, development of auditory or vocal behaviour
- high risk of chronic middle ear problems, eg. Down syndrome, cleft palate
- other craniofacial abnormalities
- family history of permanent sensorineural hearing loss (SNHL) from early childhood (in parents or siblings only)
- NICU or SCBU child who had intermittent positive pressure ventilation for more than 5 days
- jaundice or hyperbilirubinaemia requiring exchange transfusion
- proven or possible congenital infection due to one of the following (TORCH):
 - toxoplasmosis
 - rubella
 - cytomegalovirus
 - herpes
- neurodegenerative or neurodevelopmental disorders
- ototoxic drugs with monitored levels outside the therapeutic range
- the full NHSP Guide to Surveillance can be found on the NHS screening website

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Key Dates

Due for review: 31-Aug-2008

Locally reviewed: 28-Feb-2007, by preview

Updated: 28-Feb-2007

Accreditations

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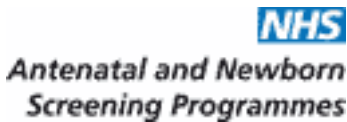
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Certifications

The evidence for this pathway is certified by:



NHS Antenatal and Newborn Screening Programmes:

Certification attained: 28-Feb-2007

Due for review: 31-Aug-2008

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Evidence summary for Newborn hearing screening - NICU or SCBU protocol

The Do Once and Share Project (part of the National Programme for IT for the NHS) commissioned the MRC Hearing and Communication Group of the University of Manchester to develop care pathways based on the Newborn Hearing screening programme (NHSP) protocols in England. These protocols were implemented across the whole of England between 2000 and 2005 and were based on the recommendations of the Health Technology Assessment Critical Review (1997). Further pathways for early audiological assessment following screening and for ongoing care and habilitation of the child identified as having permanent hearing impairment were also developed under the Do Once and Share project, but have not yet been translated into the Map of Medicine format. Where available, links have been provided to information resources developed by the NHSP.

Search date: Feb-2007

Evidence grades:

- 1** Intervention node supported by level 1 guidelines or systematic reviews
- 2** Intervention node supported by level 2 guidelines
- E** Intervention node based on expert clinical opinion
- U** Ungraded, non-intervention node

Evidence grading:

References

This is a list of all the references that have passed critical appraisal for use in the pathway Newborn hearing screening

ID Reference

- 1 Davis A, Bamford J, Wilson I et al. A critical review of the role of neonatal hearing screening in the detection of congenital hearing impairment. *Health Technol Assess* 1997; 1: i-176. [PM:9483157](#)
- 2 Kennedy CR, McCann DC, Campbell MJ et al. Language ability after early detection of permanent childhood hearing impairment. *N Engl J Med* 2006; 354: 2131-2141. [PM:16707750](#)

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access to know-how and knowledge. Users of the Map of Medicine are therefore urged to use their own professional judgement to ensure that the patient receives the best possible care. Whilst reasonable efforts have been made to ensure the accuracy of the information on this online clinical knowledge resource, we cannot guarantee its correctness or completeness. The information on the Map of Medicine is subject to change and we cannot guarantee that it is up-to-date.

NHS Antenatal and Newborn Screening Programmes

This Evidence Summary was prepared by systematically reviewing published research and guidelines relevant to the topics covered. The University of Manchester does not independently verify the accuracy of the published research or guidelines and accepts no liability for loss or damage arising from errors or omissions in this Evidence Summary, the Pathways covered by it or the research referred to in it.

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