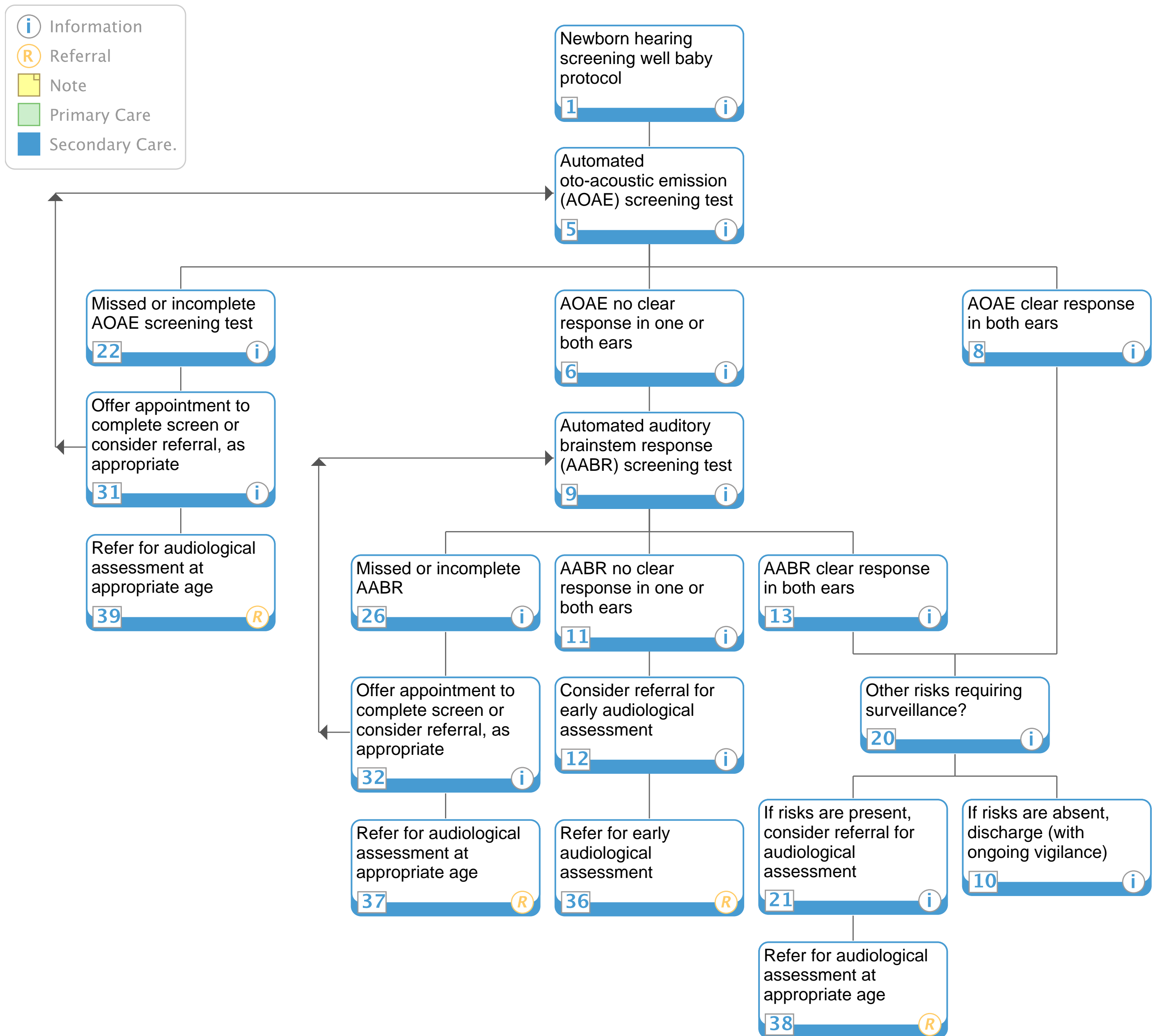
Newborn hearing screening - well baby protocol



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IMPORTANT NOTE
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Newborn hearing screening - well baby protocol

1 Newborn hearing screening well baby protocol

Quick info:

Scope:

- this pathway covers screening for hearing impairment in newborn babies in 'transitional care' or who have not been resident in the neonatal intensive care unit (NICU) or special care baby unit (SCBU) for more than 48 hours continuously (neonatal transitional care wards are for the care of term or near-term babies not needing high dependency or intensive care but that are not well enough to be on a standard ward)
- the pathway covers both well baby screening in hospital and community based services
- it summarises guidelines developed by the NHS Newborn Hearing Screening Programme (NHSP) in England; for more information about NHSP and supporting materials for these pathways can be found on the NHSP website

Out of scope:

- babies resident in the NICU or SCBU for more than 48 hours continuously should be screened using the NICU or SCBU protocol

Hospital based services:

- screening is usually carried out by screeners specifically employed to carry out hearing screening
- ideally complete screening prior to discharge from hospital
- if the process is not completed in hospital an outpatient appointment or clinic appointment or home visit is required to complete the process, usually within one visit
- aim to complete screening by age 4 weeks
- screening should not be performed on babies at less than gestational age 34 weeks

Community based services:

- screening is usually carried out by health visitors
- the first screening test usually takes place at the primary health visitor visit at approximately age 10 days
- any subsequent testing should be completed by age 5 weeks

Protocol:

- screening tests used are:
  - automated oto-acoustic emission (AOAE)
  - automated auditory brainstem response (AABR)
- AOAE is usually the first test performed; 2 attempts can be made if necessary
- AOAE is followed by AABR where indicated by the pathway
- AABR results of 'no clear response' in one or both ears are referred to audiology for early audiological assessment

5 Automated oto-acoustic emission (AOAE) screening test

Quick info:

Well baby protocol in hospital based services:

- up to two separate attempts at automated AOAE, allowing a suitable time interval (5 hours) in between the first test (AOAE 1) and second test (AOAE 2)
- AOAE 1 is sufficient if a 'clear response' is obtained in both ears

Well baby protocol in community based services:

- up to two separate attempts at AOAE, allowing a suitable time interval in between AOAE 1 and AOAE 2:
  - AOAE 2 would normally be performed at a subsequent visit, within 7 days
  - AOAE 1 is sufficient if a 'clear response' is obtained in both ears

9 Automated auditory brainstem response (AABR) screening test

Quick info:

- AABR may be considered inappropriate if baby has a skin condition which makes it medically inadvisable to attach electrodes
- both ears are tested irrespective of automated oto-acoustic emission (AOAE) results

10 If risks are 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

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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

12 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 facilties, not at 'tier 2' or intermediate or community audiology clinics

20 Other risks requiring surveillance?

Quick info:

The following risks require surveillance:

- parental or professional concern about the infant's hearing or 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

NB: Many of the babies affected by these risk factors would be present on NICU and therefore tested using the NICU/SCBU protocol.

21 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

26 Missed or incomplete AABR

Quick info:

31 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.

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Paediatrics > Screening > Newborn hearing screening

Key Dates

Due for review: 30-Aug-2008
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Accreditations

This page is accredited by:

NHS National Library for Health:
Accreditation attained: 28-Feb-2007
Due for review: 31-Aug-2008
Disclaimer

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
Disclaimer

Evidence summary for Newborn hearing screening - well baby 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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NHS Antenatal and Newborn Screening Programmes

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