



Topic Expert Group: Follow-up and continuing care

Hearing screening

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Target group

Infants born very preterm or those infants with risk factors (see preamble TEG Follow-up & continuing care) and parents

User group

Healthcare professionals, neonatal units, hospitals, follow-up teams, and health services

Statement of standard

Standardised hearing screening is conducted using Automated Auditory Brainstem Response (AABR) technology before one month of age, and where necessary diagnostic investigations are completed before three months and early interventions are started within the first six months.

Rationale

The goal of this standard is to ensure screening and evaluation of hearing function in high-risk newborn infants and start auditory habilitation and follow-up for those infants with diagnosed congenital or early hearing impairment. (1–4)

Permanent childhood hearing impairment (PCHI) has a prevalence of 1 per 1000 live-born children, rising to 6 per 1000 at school age and is usually defined as hearing impairment of 30 dB or more in the better ear. (4–6) Even this relatively limited hearing loss will impair language and speech development with lasting consequences. (7,8) Social and emotional development and academic achievements will also be affected. (9–15)

When the hearing impaired child is identified shortly after birth and appropriate interventions are promptly started, with family counselling and amplification with hearing aids or cochlear implants for the child, the gains are enormous. (7,10) Studies have shown that this can enable a child who is deaf or severely hard of hearing to achieve better outcomes in language and speech development, very often within the normal range, with ultimately much improved social, academic, and work achievements in adult life. (6,7,9,10)

Monitoring and follow-up, especially in the pre-lingual period, is essential, for all children with hearing loss and especially those with risk factors for progressive or late onset hearing impairment. (16)

Benefits

Short-term benefits

N/A

Long-term benefits

- Early counselling to engage parents in their child's special needs (16,17)
- Early initiation of interventions (3,4,8)



- Improved use of various means of communication (e.g. visual, tactile, and other stimuli) with a hearing impaired child from the earliest possible age (3)
- Improved parent-child interaction and bonding (16,18)
- Prevented or reduced language and speech developmental problems (7)
- Prevented or reduced social and emotional problems (9)
- Improved chances for attending mainstream education with better academic achievements (6,10), as well as optimal study and training opportunities with prospects for better work and financial potentials (11)
- Reduced societal and educational costs (12–15)
- Increased quality of life of children, parents and families (19,20)
- Broader medical investigations which might not otherwise be initiated. Hearing impairment is often associated with other disorders and occurs frequently as part of a specific genetic syndrome (16)
- Provides feedback for perinatal and public health records (11)

Components of the standard

Component	Grading of evidence	Indicator of meeting the standard
For parents and family		
1. Parents are informed about universal neonatal hearing screening, and invited and encouraged by healthcare professionals to participate. (4,5)	A (High quality) B (High quality)	Patient information sheet
2. Parents receive standardised feedback about the results of their child's hearing screening in language that is accessible to them.	B (Moderate quality)	Parent feedback
3. Parents of children with a 'failed' hearing screening outcome are invited and encouraged by healthcare professionals to attend diagnostic assessments regarding cause, type and degree of hearing loss within three months of birth. (3–5)	A (High quality) B (High quality)	Clinical records, guideline, patient information sheet
4. Parents of children with permanent childhood hearing impairment (PCHI) are invited and encouraged by healthcare professionals to begin interventions including family guidance and amplification for the child as early as possible after diagnosis, certainly within six months of birth. (3–6)	A (High quality) B (High quality)	Guideline, patient information sheet
5. Parents have the opportunity to have	B (Moderate quality)	Patient information



contact with other parents of young children with hearing loss.		sheet
6. Parents are asked for permission to allow their child's medical and educational information to be used for outcome measures.	B (Low quality)	Parent consent, patient information sheet
7. Parents are asked to consent to share the results of their child's hearing screening tests with education providers.	B (Moderate quality)	Parent consent
For healthcare professionals		
8. A guideline on hearing screening of all newborn infants using an appropriate validated objective screening method within one month of birth, or term equivalent age as well as gold standard audiological diagnostic investigations to evaluate the type and degree of hearing impairment when the hearing screening is not "passed" by the screening method is adhered to by all healthcare professionals. (3,4,21)	A (High quality) B (High quality)	Guideline
9. The screening method used is appropriate to the child and situation, e.g. very preterm infants are screened using AABR because of the risk of post cochlear pathology. (3,4,21)	A (High quality)	Audit report, guideline
10. Training on hearing screening and gold standard audiological diagnostic assessments used to evaluate the type and degree of hearing impairment when the hearing screening is not "passed", is attended by all responsible healthcare professionals (screeners). (3,4,21)	A (High quality) B (High quality)	Training documentation
11. A guideline on diagnostic evaluation and early interventions to be started as early as possible after the diagnosis of hearing impairment and certainly before the age of 6 months, as well as on appropriate and adequate follow-up of children with hearing loss (including late-onset types) is adhered to by all healthcare professionals. (3,4,16,21)	A (High quality) B (High quality)	Guideline



For neonatal unit, hospital and follow-up team

12. A guideline on hearing screening and referral for further interventions where necessary is available and regularly updated.	B (High quality)	Guideline
13. Appropriate screening facilities and screeners are provided in hospitals where infants are born or admitted during the first weeks of life and also, when appropriate, in public health child services. (3,4)	A (High quality) B (High quality)	Audit report
14. Training on hearing screening and gold standard audiological diagnostic assessments used to evaluate the type and degree of hearing impairment when the hearing screening is not “passed”, is ensured.	B (High quality)	Training documentation

For health service

15. A national guideline on universal neonatal hearing screening and referral for further interventions where necessary is available and regularly updated.	B (High quality)	Guideline
16. A national legal framework and funding is provided for hearing screening, diagnostic investigations, auditory habilitation, education, care, and follow-up. (3–5)	A (High quality) B (Moderate quality)	Legal framework

Where to go – further development of care

Further development	Grading of evidence
For parents and family	
<ul style="list-style-type: none"> Ensure that parents who are deaf or severely hard of hearing themselves are sufficiently supported by a case manager and speech-to sign language interpreters and all other necessary communication methods. 	B (High quality)
<ul style="list-style-type: none"> Provide funding to allow parents who are socially disadvantaged to participate in the follow-up hearing evaluations and interventions. 	B (High quality)
For healthcare professionals	
<ul style="list-style-type: none"> If required, provide sign interpreter. 	B (Moderate quality)



For neonatal unit, hospital, and follow-up team

N/A

For health service

- Evaluate and institute very early amplification (22) A (High quality)

Getting started

Initial steps

For parents and family

- Parents are informed about the availability of neonatal hearing screening facilities and the importance of attending, and when necessary, also attending for diagnostic investigations after a 'failed' screen result.

For healthcare professionals

- Attend training on hearing screening and gold standard audiological diagnostic assessments used to evaluate the type and degree of hearing impairment when the hearing screening is not "passed".
- Promote awareness of the devastating effects of congenital and early childhood hearing impairment and the significant benefits of early detection and habilitation of hearing impairment.
- Use any available tool to test hearing in a standard way for screening.

For neonatal unit, hospital, and follow-up team

- Develop and implement a guideline on neonatal hearing screening.
- Develop information material on neonatal hearing screening for parents.
- Provide a service to perform standardised hearing screening.
- Support healthcare professionals to participate in training on neonatal hearing screening.
- Provide a service to perform standardised hearing screening.

For health service

- Develop and implement a national guideline on universal neonatal hearing screening.
- Work towards having facilities in place for those who fail the screening with adequate and appropriate diagnostic and habilitation facilities available for all.

Source

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