



AMERICAN
SPEECH-LANGUAGE-
HEARING
ASSOCIATION

Roles, Knowledge, and Skills: Audiologists Providing Clinical Services to Infants and Young Children Birth to 5 Years of Age

Reference this material as: American Speech-Language-Hearing Association. (2006). *Roles, Knowledge, and Skills: Audiologists Providing Clinical Services to Infants and Young Children Birth to 5 Years of Age* [Knowledge and Skills]. Available from www.asha.org/policy.

Index terms: newborns, infants and toddlers, children, assessment, early intervention

DOI: 10.1044/policy.KS2006-00259

© Copyright 2006 American Speech-Language-Hearing Association. All rights reserved.

Disclaimer: The American Speech-Language-Hearing Association disclaims any liability to any party for the accuracy, completeness, or availability of these documents, or for any damages arising out of the use of the documents and any information they contain.

About This Document

This knowledge and skills document is an official statement of the American Speech-Language-Hearing Association (ASHA). It is intended for audiologists who serve infants and young children. However, given the necessity and importance of multidisciplinary service providers for young children and their families, other stakeholders may benefit from this document in the context of early hearing detection and intervention program development.

This document acknowledges the unique and complex nature of providing audiologic services to infants and young children and their families. Additionally, this document augments the Scope of Practice in Audiology (ASHA, 2004c) and the Guidelines for the Audiologic Assessment of Children From Birth to 5 Years of Age (ASHA, 2004a).

Audiologists who serve the pediatric population are appropriately credentialed and qualified and possess a current Certificate of Clinical Competence in Audiology and/or valid state license where required by law. Therefore, recommendations in this document do not prohibit a certified audiologist from providing services within their scope of practice to the pediatric population. However, service provision to any population must be in accord with the ASHA Code of Ethics, including Principle of Ethics II, Rule B, which states, "Individuals shall engage in only those aspects of the profession that are within their competence, considering their level of education, training, and experience" (ASHA, 2003a).

Members of the committee who prepared this document were Pam Mason (ex officio), Allan O. Diefendorf (chair), Kathryn L. Beauchaine, Diane L. Sabo, and Anne Marie Tharpe. Roberta B. Aungst, vice president for professional practices in audiology (2004–2006), served as monitoring vice president.

Introduction

The American Speech-Language-Hearing Association (ASHA) acknowledges that infants and young children are a unique population that requires the special knowledge, skills, and experience of audiologists specifically educated to provide audiological services. This document is the second in a series of practice policy documents (ASHA, 2004a) intended for use by audiologists engaged in service delivery with the pediatric population (birth to 5 years of age). The audiologist's role in newborn hearing screening or other screening programs is acknowledged in other ASHA documents (ASHA, 1996; Joint Committee on Infant Hearing, 2000). Therefore, the focus of this document is on audiologic follow-up, including diagnostics, counseling, and audiologic care coordination.

Audiologic service provision to the pediatric population requires (1) the establishment of an accurate diagnosis of hearing status, (2) effective family counseling conducted in parallel with the diagnostic process, and (3) timely service coordination. As such, the practice of audiology with the pediatric population requires a three-pronged approach, frequently occurring simultaneously, with an audiologist serving as

- diagnostician,
- counselor, and
- audiologic care coordinator (case manager).

Figure 1. ASHA scope of practice in audiology.

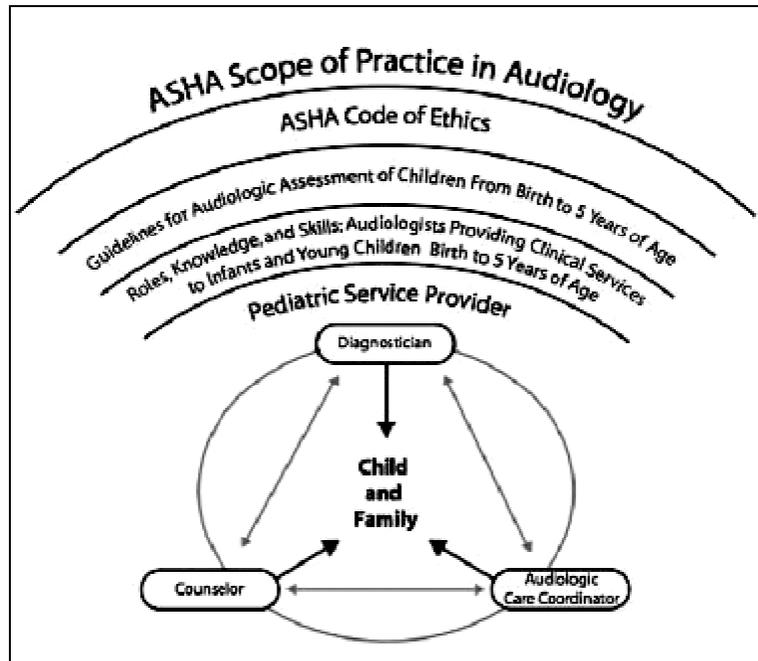


Figure 1 illustrates the tripartite roles of an audiologist engaged in pediatric service delivery to children and their families,¹ under the framework of responsible professional practice.

Underlying all aspects of audiology practice with the pediatric population are four elements:

1. accessible, continuous, comprehensive, coordinated, and compassionate care;
2. family-centered and culturally competent care;
3. extensive knowledge of social-emotional, cognitive, and communicative development that serves as the foundation for the optimal development of the whole child and the provision of developmentally appropriate care; and
4. evidence-based practices.

Furthermore, an audiologist must demonstrate interpersonal skills that promote effective communication with children, their families, and fellow professionals in the health care, early intervention, and educational communities.

¹ The term *family* includes biologic, adoptive, foster parents, grandparents, or others who live with the child in a familial environment. Legal definitions of *family* may vary by jurisdiction. The title *parents* means the caregivers who share primary responsibilities for the child's care and welfare. Audiologists must honor all family relationships and maintain compliance with HIPAA regulations and other privacy requirements.

Roles

Continuity of care for infants and children has evolved into a priority as a public health mandate in the United States (American Academy of Pediatrics, 2005). As such, family-centered practices imply that whenever possible, families should receive the majority of their hearing health care services at one facility by one audiologist. Furthermore, to acquire the requisite knowledge, skills, and experience as outlined herein, to work with the pediatric population, an audiologist's practice should consist largely of infants and young children and their families. However, the diversity of service provision models throughout the country is recognized.

After initial identification or suspicion of permanent or long-standing hearing loss, an audiologist who has the requisite knowledge, skills, and experience should serve as audiologic care coordinator for infants and young children with hearing loss and their families. When multiple diagnostic or management sites must be used in the assessment and management of a child, close collaboration between and among facilities, including the child's medical home (www.medicalhomeinfo.org), should be maintained to ensure continuity and quality of care for the child.

I. Diagnostician

The *Guidelines for the Audiologic Assessment of Children From Birth to 5 Years of Age* (ASHA, 2004a) recommend a comprehensive pediatric assessment that includes behavioral, physiologic, and developmental measures. In test battery selection, an audiologist should use test procedures that are evidence-based and cost-effective. Moreover, corroboration of test results with case history, parent report, and observations of child behavior is vital to assessing the functional use of hearing.

Diagnostic audiologic services for children can be rendered in a variety of settings. However, children age 5 years and under and their families require child-friendly and child-knowledgeable staff, facilities, services, and equipment to facilitate optimal comprehensive audiologic assessment and management (see ASHA, 2004a). A family-centered and culturally competent approach that advocates involvement of the family to the fullest extent they desire must be maintained throughout the diagnostic and intervention process.

A. Requisite background knowledge

1. Acoustics

Understanding/knowledge:

- acoustic signals and calibration
- impact of ear canal acoustics on calibration
- impact of conversions across different transducers as they relate to hearing level, to sound pressure level (SPL), and to estimates of real-ear SPL

Skills (ability):

- to apply requisite knowledge to service delivery

2. Auditory mechanism

Understanding/knowledge:

- auditory anatomy including neuroanatomy
- auditory physiology including neurophysiology
- embryology of the ear and related structures

Skills (ability):

- to apply requisite knowledge to service delivery

3. Etiology of hearing loss

Understanding/knowledge:

- genetics and birth defects
- chromosomal abnormalities
- teratogens
- pathophysiology
- aural trauma
- prematurity
- risk indicators for hearing loss, including incidence and prevalence across race and ethnicity

Skills (ability):

- to apply requisite knowledge to service delivery

4. Child development

Understanding/knowledge:

- auditory behavior and developmental psychoacoustics
- cognition and cognitive processes
- speech and language acquisition and milestones
- social-emotional behavior
- motor skill acquisition and milestones

Skills (ability):

- to apply requisite knowledge to service delivery
- to adapt the environment to promote positive clinician-child interactions (e.g., child-size furniture, pediatric headband, insert earphones with a variety of insert tips, variety of toys, multiple reinforcers)
- to adapt to diversity of child (e.g., behaviors, development, cultures) and family
- to sustain comfort of child (i.e., sensitivity to the physical and emotional comfort of the child and family)
- to promote effective interpersonal communication with child, family, and other professionals

5. Clinical decision making

Understanding/knowledge:

- levels of evidence in research literature
- test selection, prioritization, and adaptation based on
 - parental concern
 - referral reason
 - case history
 - child's developmental age
 - child's physical condition
 - child's behavior
- importance and implication of test battery approach, executed in a cost-efficient manner

Skills (ability):

- to integrate new test protocols into clinical practice when their introduction is supported by comprehensive, peer-reviewed research

- to recognize the need to adjust test order and modify procedures based on information (e.g., test findings, child behavior, communication mode, and language preference) as it is acquired
- to adjust test selection and sequence as needed to maximize likelihood of assessment completion

B. Assessment/test knowledge

1. Case history and its implications

Understanding/knowledge:

- effective interview techniques
- interaction between child's medical and developmental history and audiologic assessment and interpretation
- impact of multiple disabilities (e.g., visual deficits, cognitive level, motor coordination) on audiologic assessment and interpretation
- indications for, and frequency of, continued surveillance

Skills (ability):

- to interview families in family-friendly, culturally competent manner to obtain background history
- to use information from case history to develop assessment plan and interpret findings
- to identify, acquire, and review other relevant sources of information (i.e., birth records, other test results, information from other facilities)
- to observe child behavior
 - differentiate and estimate gestational, chronological, corrected, and developmental age
 - ascertain child's demeanor and development
 - recognize how deviations from typical behavior and development affect test administration and test interpretation
 - recognize how deviations from typical behavior and development indicate need for additional referral(s)
- to select and administer appropriate developmental screening tools when indicated
- to establish appropriate audiologic follow-up schedule

2. Otoscope procedures

Understanding/knowledge:

- malformations and pathological conditions of the pinna and ear canal
- conditions that can alter audiologic test results (i.e., ear canal occlusion, foreign body)
- conditions that mandate implementation of standard/universal precautions

Skills ability:

- to position parent and child to ensure comfort and safety during procedure
- to recognize contraindications for further testing
- to apply standard/universal precaution procedures

3. Physiologic test procedures (evoked potentials; e.g., auditory brainstem response, auditory steady state response, otoacoustic emissions, acoustic immittance)

Understanding/knowledge:

- procedure-specific evidence-based protocols
 - protocol(s) for moderate sedation when sedation is indicated (American Society of Anesthesiologists, 2002)

- age-appropriate normative data (e.g., *Guidelines for Competencies for Auditory Evoked Potential Measurement and Clinical Applications*; ASHA, 2003b)
- recording parameters appropriate for pediatric population (*Guidelines for the Audiologic Assessment of Children From Birth to 5 Years of Age*; ASHA, 2004a)

Skills (ability):

- to apply techniques for maximizing patient comfort, cooperation, and safety (e.g., pretest instructions, test environment)
- to select transducers to minimize ambiguous audiologic outcomes
- to implement recommendations in the guidelines and documents referenced above

4. Behavioral test procedures (visual reinforcement audiometry, tangible reinforcement operant conditioning audiometry, conditioned play audiometry, speech audiometry, functional auditory screening tools)

Understanding/knowledge:

- principles of operant conditioning
- functional audiologic assessment
- speech perception and language development

Skills (ability):

- to implement a test battery to assess hearing status using physiologic measures and developmentally appropriate behavioral techniques
- to apply assessment techniques for maximizing patient comfort and cooperation
- to apply age-appropriate conditioning paradigm
- to apply age-appropriate reinforcement techniques
- to select and administer appropriate speech audiometry tools
- to select and administer appropriate functional auditory screening tools

C. Test interpretation knowledge

Understanding/knowledge:

- typical and atypical audiologic test patterns
- test validity and reliability
 - limitations or completeness of findings
 - potential limitations of stimuli used
- child factors
 - developmental age
 - behavioral compliance
- relationship between findings (physiologic and behavioral)
- speech perception and impact of varying degrees of hearing loss
- audiologic findings within the context of other health or developmental issues
- psychoeducational impact of hearing loss
- importance of continued surveillance/periodic monitoring
- options for audiologic (re)habilitation
 - benefits and limitations of each

Skills (ability):

- to determine the type, degree, and configuration of the hearing loss for each ear

- to rectify seemingly paradoxical findings
- to integrate and weigh test findings (physiologic and behavioral) relative to agreement among and between tests
- to synthesize audiologic findings
- to integrate the audiologic findings with other health or developmental issues
- to determine audiologic follow-up schedule
- to determine audiologic (re)habilitation strategies

II. Counselor

Counseling begins when the family first seeks services and is introduced to the diagnostic process. The audiologic assessment provides an excellent opportunity for audiologists to enlist parents as collaborators in the diagnostic process. Although counseling will remain dynamic, sometimes comprising information dissemination and exchange (content counseling) and sometimes involving the provision of emotional support, it remains an integral part of comprehensive service provision implemented by audiologists for children and their families. In supplying information to families, and also potentially to extended families, audiologists must recognize and respect the family's natural transitions through the grieving process at the time of initial diagnosis of hearing loss and at different intervention decision-making stages.

Content counseling is important for informational purposes, but emotional support and guidance through the grieving process also must be acknowledged and provided by audiologists. Furthermore, content counseling may not be successful with parents of newly identified hard of hearing or deaf children *until* parents have opportunities to work through their emotions. Audiologists must acknowledge parents' feelings, which can be intense, as they engage themselves in providing emotional support and guidance through the grieving process.

• *Requisite background knowledge*

Understanding/knowledge:

- different theories of effective counseling (e.g., humanistic, behavioristic)
- importance of using culturally and linguistically appropriate modes of communication (i.e., manually coded languages, interpreters/translators)
- impact of sociocultural diversity on service provision
- applicable laws (e.g., Health Insurance Portability and Accountability Act of 1996 (HIPAA) and Family Educational Rights and Privacy Act (FERPA; 1997), ensuring privacy and confidentiality)

Skills (ability):

- to engage in empathetic listening
- to select culturally sensitive materials and strategies
- to use interpreters and translators appropriately
- to use jargon-free language and adjust to appropriate level of literacy to facilitate effective communication with the child and family
- to obtain HIPAA-compliant release of information
- to implement counseling in a location that ensures patient confidentiality

• *Content counseling*

Understanding/knowledge:

- hearing and hearing loss

- the potential impact of a child's hearing loss on development
- amplification options including personal hearing instruments, frequency modulation systems, cochlear implants, tactile devices, and other hearing-assistive technologies
- the full continuum of educational interventions
- state and local early hearing detection and intervention (EHDI) services
- linguistically appropriate family educational materials
- Skills (ability):
 - to convey results of the audiologic assessment, implications of the audiologic diagnosis, and recommendations for intervention to the family
 - to recognize when and how much information a family can accept/absorb following diagnostic outcome
 - to incorporate findings from medical and educational professionals into the audiologic service plan
 - to maintain objectivity and impartiality
 - to present information in a professional and unbiased manner
 - to identify resources for families to access EHDI services and other appropriate educational materials
- Support and guidance counseling
 - Understanding/knowledge:
 - emotions and coping responses related to diagnosis of hearing loss and its sequelae
 - principles of effective counseling
 - impact of hearing loss/deafness on family dynamics/family functioning
 - when to refer to a professional counselor
 - Skills (ability):
 - to develop and practice nonjudgmental listening skills
 - to create an environment that facilitates open communication
 - to recognize the need for referral to other professionals

III. Audiologic care coordinator (case manager)

Children with hearing loss can receive care from many different medical, allied health, and education professionals who work independently in various locations. It is essential that there be adequate communication and coordination among all of the care providers for the child to achieve maximum success. Additionally, families need guidance in identifying, assessing, and negotiating complex service networks. As such, an audiologist takes on an additional role in the care of children with hearing loss. A critical role of audiologic care coordination is to facilitate and link children and their families to resources and services.

The role of an audiologist as the coordinator of audiologic care requires the requisite experience to serve in a lead capacity beginning in the early stages of diagnosis. Audiologic care coordination includes, but is not limited to, such things as ongoing assessment and counseling, determining the need and timing of additional referral(s) in consultation with the medical home, initiating access to amplification when appropriate, and linking the child and family to intervention services. Every situation requires consideration of the child's developmental status, the child's medical status, as determined by the child's medical home, and the overall needs of the family during times of vulnerability. As such, coordinating

service delivery at a critical time in the post-diagnosis period is a dynamic and individualized process. The goal of audiologic care coordination is to maximize the potential of children with hearing loss and optimize their services.

A. *Requisite background knowledge*

Understanding/knowledge:

- state and federal legislation (HIPAA, FERPA, Individuals with Disabilities Education Act [IDEA, 1997, 2004])
- local and state educational resources
- funding resources
- practical accommodations for life within their family (e.g., how to communicate effectively, use of assistive listening devices in certain circumstances)
- difference between assisting and empowering families
- family needs assessments
- identifying potential barriers to service provision

Skills (ability):

- to communicate the implications of state and federal legislation and regulations to family
- to provide access to the resources that the family will require to become advocates for their children
- to provide appropriate selection and distribution of materials to families and other professionals (e.g., handouts, pamphlets, videotapes/DVDs).
- to refer to appropriate intervention and/or educational programs

B. *Advocating for patient and family*

Understanding/knowledge:

- the importance of enabling and empowering families
- informational materials and resources
- technology resources (e.g., other assistive technology)
- local and national support groups

Skills (ability):

- to maintain objectivity and support for all families, even for those who are noncompliant or whose informed decisions are in conflict with an audiologist's professional judgment
- to facilitate a family's independence and informed decision making
- to work toward the family taking an advocacy role
- to serve as an unconditional support for all families, both traditional and nontraditional
- to exercise good listening skills (e.g., empathetic or reflective listening)

C. *Coordinating services related to hearing loss (communication with others on the early intervention team)*

Understanding/knowledge:

- medical home concept and audiologists' role
- determinants of and barriers to providing audiologic and related services
- impact of multiple disabilities on service provision
- State EHDI programs and their reporting requirements
- amplification options and referral sources (e.g., cochlear implant center, audiology center that dispenses hearing instruments to young children)

- principles underlying the implementation of the Individualized Education Plan (IEP) and the Individualized Family Service Plan (IFSP)
- Skills (ability):
- to effectively communicate recommendations to medical professionals, educational professionals, and other professionals as appropriate
 - to identify determinants of and barriers to providing audiologic and related services
 - to assess candidacy for sensory devices (e.g., hearing instruments, assistive listening devices, cochlear implants; Pediatric Working Group, 1996)
 - to maintain effective communication, particularly with families in distress, and defuse potentially adversarial situations
 - to apply results of developmental scales to management plan process
 - to seek creative alternatives for service coordination in atmosphere of cost containment and limited resources
 - to participate effectively in IFSP or IEP meetings

References

All ASHA policy documents are available electronically at <http://www.asha.org/reference>

- American Academy of Pediatrics. (2005). *Newborn and infant hearing screening activities*. Grove Village, IL: Author. Available from: <http://www.medicalhomeinfo.org>.
- American Society of Anesthesiologists. (2002). Practice guidelines for sedation and analgesia by non-anesthesiologists. *Anesthesiology*, 96, 1004-1017.
- American Speech-Language-Hearing Association. (2003a). *Code of ethics (revised)*. Rockville, MD: Author.
- American Speech-Language-Hearing Association. (2003b). *Guidelines for competencies in auditory evoked potential measurement and clinical applications*. Rockville, MD: Author.
- American Speech-Language-Hearing Association. (2004a). *Guidelines for the audiologic assessment of children from birth to 5 years of age*. Rockville, MD: Author.
- American Speech-Language-Hearing Association. (2004b). *Knowledge and skills needed by speech-language pathologists and audiologists to provide culturally and linguistically appropriate services*. Rockville, MD: Author.
- American Speech-Language-Hearing Association. (2004c). *Scope of practice in audiology*. Rockville, MD: Author.
- American Speech-Language-Hearing Association Audiologic Assessment Panel. (1996). *Guidelines for audiologic screening*. Rockville, MD: Author.
- Family Educational Rights and Privacy Act, 20 U.S.C. § 1232g; 34 C.F.R. Part 99 (1997).
- Health Insurance Portability and Accountability Act of 1996, Pub L. No. 104-191.
- Individuals with Disabilities Education Act Amendments of 1997, P.D. No. 105-17, 111 Stat. 38 (1997), reprinted as amended in 20 U.S.C. 1400-1485.
- Individuals with Disabilities Education Improvement Act of 2004, Pub L. No. 108-446, 118 Stat. 2647 (2004).
- Joint Committee on Infant Hearing. (2000). *Year 2000 position statement: Principles and guidelines for early hearing detection and intervention programs*. Grove Village, IL: Author. Available from: <http://www.asha.org>.
- Pediatric Working Group of the Conference on Amplification for Children With Auditory Deficits. (1996). Amplification for infants and children with hearing loss. *American Journal of Audiology*, 5, 53-68.