



College of Audiologists and
Speech-Language Pathologists of Ontario

Ordre des Audiologistes et
des Orthophonistes de l'Ontario

PRACTICE STANDARDS AND GUIDELINES FOR HEARING ASSESSMENT OF CHILDREN BY AUDIOLOGISTS

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TABLE OF CONTENTS

A) PREAMBLE.....	1
B) DEFINITION OF SERVICE	2
C) SCOPE OF PRACTICE	3
D) RESOURCE REQUIREMENTS	4
E) COMPETENCIES	6
F) COMPONENTS OF SERVICE DELIVERY	8
1. DETERMINATION OF NEED.....	8
2. RISK MANAGEMENT	8
3. PROCEDURES.....	9
Case History	9
Otoscopy	10
Frequency Specific Threshold Determination	10
Otoacoustic Emissions	13
Middle Ear Analysis	13
Speech-based Measures	14
Real Ear to Coupler Difference Measurement.....	15
Follow-up and Discharge.....	15
G) GLOSSARY	18

A) PREAMBLE

Practice Standards and Guidelines (PSGs) are necessary to ensure quality care to the people of Ontario who require hearing health care. The initial assessment of auditory function is fundamental to providing quality hearing health care. It is the intent of this guideline to provide audiologists in Ontario with an overview of the specific processes for hearing assessment in children and to provide some of the knowledge necessary to make responsible decisions regarding paediatric hearing assessment. This guideline is meant to be used as a decision-making framework. It is not intended to be a tutorial or to provide audiologists with all the information required for hearing assessment for children. Audiologists are ethically responsible to ensure their competence in hearing assessment for children and to ensure that their patients/clients are safe during the performance of these services. Specific competencies are required for paediatric populations. It is essential that audiologists have the necessary knowledge, skill, judgement, resources and equipment for hearing assessment in this population where the risk of harm may be amplified.

This PSG incorporates both “must” and “should” statements. “Must” statements establish standards that audiologists must always follow. In some cases, “must” statements have been established in legislation and/or CASLPO documents. In other cases, the “must” statements describe standards that are established for the first time in this PSG.

“Should” statements incorporated into this guideline describe best practices. To the greatest extent possible, audiologists should follow these best practice guidelines. Audiologists should exercise professional judgment, taking into account the environment(s) and the individual patient/client’s needs when considering deviating from this guideline. Audiologists must document and be prepared to fully explain departures from this guideline.

B) DEFINITION OF SERVICE

This document describes hearing assessment for children by audiologists. Permanent hearing impairment has significant developmental implications if not identified early.

Hearing loss affects a child's speech-language, cognitive and social development and academic potential. Therefore, the prompt identification of hearing loss and intervention to mitigate its effects is of critical importance. Comprehensive hearing assessment for children by audiologists includes behavioural, physiologic and developmental measures and multiple tests in a test battery which is outcome-based, valid and reliable. Using a test battery or a multi-component approach to assessment provides cross-checks for assessment accuracy and facilitates interpretation.

Referral for hearing assessment for children often occurs in the first months of life. In this population and others of an equivalent developmental level, a reliance on electrophysiological measures in the attainment of threshold estimates is necessary and is considered adequate for proceeding with hearing aid fitting or other intervention.

For older children and children at a more advanced developmental level, behavioural hearing threshold measurement is possible and appropriate. Regardless of the procedures used in the acquisition of hearing thresholds and threshold estimates, certain principles representing standards of practice for audiologists in the performance of these procedures apply and are outlined in this document.

The main goals of hearing assessment for children are (i) to determine the presence or absence of hearing impairment, (ii) to provide a sufficient audiometric basis, in the case of identification of hearing impairment, to begin treatment or intervention to improve hearing, and (iii) to provide a baseline for follow-up services such as surveillance for late-onset or progressive hearing impairment, candidacy for assistive devices, referral to intervention services and additional evaluation. The specific objectives of hearing assessment are to obtain valid and accurate estimates of ear-specific, frequency-specific hearing thresholds and to determine the type of any hearing impairment present (conductive, sensorineural and mixed).

C) SCOPE OF PRACTICE

The [*Audiology and Speech-language Pathology Act, 1991*](#), states: "The practice of audiology is the assessment of auditory function and the treatment and prevention of auditory dysfunction to develop, maintain, rehabilitate or augment auditory and communicative functions." 1991, c. 19, s. 3 (1). Hearing assessment is within the scope of practice of audiologists in Ontario. Hearing assessment to quantify and qualify hearing in terms of the degree, type and configuration of the hearing loss in children requires additional skills. This should only be performed by audiologists who are well trained and experienced in procedures and who are fully prepared to manage any problems that might develop. Competence in hearing assessment is gained through the academic training program, hands-on training, experience and continuing education opportunities. Individual audiologists must decide whether they have the competencies to offer hearing assessment for children. It is essential that audiologists have the necessary knowledge, skill, judgement, resources and equipment to provide hearing assessment for children in order to minimize harm for infants and children and their families requiring these services.

D) RESOURCE REQUIREMENTS



Standard

D.1

Audiologists must have the required resources in order to perform hearing assessment in children.

Audiologists must have the following resources to perform hearing assessment for children:

1. An audiometric test environment compliant with ANSI S3.1 - 1999 (R 2003 or current version) for maximum permissible ambient noise levels for audiometric test rooms. ¹ If any portion of the hearing assessment is conducted through a sound field speaker, then the room should meet the minimum dimensional requirements for speaker calibration.
2. A type 1A (ANSI S3.6 - 2004 or current version) full-range dual channel diagnostic audiometer with insert earphones (Etymonic 3A or 5A pending Health Canada approval) and TDH style headphones (ANSI S3.7 - 1995 (R 2003) or current version), and bone conduction oscillator (ANSI S3.13 - 1987 (R 2007) or current version);
3. High resolution otoscope with paediatric and standard tips;
4. A type 1 (ANSI S3.39 - 1987 (R 2007) or current version) full-range acoustic immittance measurement system;
5. Materials required to meet the standards for infection control based on the needs of the practice. In most instances, resources to ensure cleaning, sanitization and low level disinfection will be sufficient (e.g., disposable gloves, cleaning solutions). In cases where the need for infection control is semi-critical, such as with a patient/client who presents with non-intact skin, resources for intermediate or high level disinfection will be required. Refer to [*Infection Prevention and Control Guidelines for Audiologist*](#).

All of the above equipment should be routinely checked for function and calibrated according to manufacturer specifications.



Standard

D.2

Audiologists must have the required resources to meet the needs of the population served and procedures utilized.

The following resources are optional in the performance of hearing assessment for children in general but must be utilized when specific test procedures are needed to meet the individual needs of the child.

1. Diagnostic auditory brainstem response technology capable of 2-channel recording at multiple frequencies via air and bone conducted stimuli;

2. A type 1 (ANSI S3.39 - 1987 (R 2007) or current version) full-range acoustic immittance measurement system capable of both low frequency (226Hz) and high frequency (660 - 1000Hz) tympanometry;
3. Distortion product or transient evoked otoacoustic emissions test equipment;
4. Visual reinforcement audiometric system, with at least two animated toys or video reinforcers;
5. Selection of toys for conditioned play and distraction during visual reinforcement audiometry;
6. Cerumen management tools and materials.
7. Real-ear measurement system (ANSI S3.35 - 2004, ANSI S3.42 - 1992 (R 2007) or current versions).



Standard

D.3

Audiologists must make appropriate and expedient referrals when they do not have the required resources to meet the needs of the patient/client.

In the event that these resources are deemed necessary for the completion of an assessment of an individual and the audiologist does not have them available, appropriate expedient referrals must be made.

E) COMPETENCIES



Standard

E.1

Audiologists must have the required competencies to perform procedures covered in this PSG.

The audiologist must demonstrate knowledge of:

- a. Anatomy and physiology of the auditory system.
 - b. Normal auditory functioning and development
 - c. Disorders of the auditory system and the nature of their presentation in diagnostic assessments.
 - d. Instrumentation associated with diagnostic assessment.
 - e. Interpretation of test battery results as relates to hearing disorders.
1. Demonstrate knowledge of child development, specifically in the areas of normal auditory, speech and language development, and other developmental milestones.
 2. Demonstrate knowledge of signs and symptoms of developmental delays and disorders in children, and risk indicators that negatively impact child development.
 3. Demonstrate the ability to obtain a relevant case history from the parent/caregiver and child, as appropriate, with particular attention paid to perinatal and paediatric risk indicators, auditory disorders and common aetiologies.
 4. Demonstrate knowledge of the interpretation of case history results as relates to hearing disorders.
 5. Demonstrate knowledge of an appropriate otoscopic examination technique of the external ear and ear canal.
 6. Demonstrate knowledge of the pathologies of the external ear and ear canal that may be identified through otoscopic examination, how they relate to hearing disorders and their treatment.
 7. Demonstrate knowledge of and skill in evidence-based hearing assessment procedures.
 8. Demonstrate knowledge of a range of hearing assessment techniques appropriate for the developmental level and attention of the child.
 9. Demonstrate skill in engaging infants and children, play techniques, and preparing infants and children for test procedures such as operant conditioning, behaviour management.
 10. Demonstrate knowledge of an appropriate tympanometric assessment protocol to demonstrate the presence or absence of pathologies of the outer and middle ear.

11. Demonstrate knowledge of interpretation of tympanometric assessment results as relates to pathologies of the outer and middle ear and hearing disorders.
12. Demonstrate knowledge of an appropriate acoustic stapedial reflex assessment protocol to demonstrate the presence or absence of pathologies of the acoustic stapedial reflex arc.
13. Demonstrate knowledge of interpretation of acoustic stapedial reflex assessment results as relates to pathologies of the acoustic reflex arc and hearing disorders.
14. Demonstrate knowledge of an appropriate protocol for manual pure-tone audiometry including air conduction, bone conduction and masking techniques.
15. Demonstrate knowledge of the interpretation of the results of manual pure-tone audiometry as relates to hearing disorders.
16. Demonstrate knowledge of speech audiometry protocols including speech recognition thresholds, word recognition, and comfort and loudness discomfort levels.
17. Demonstrate knowledge of the interpretation of speech audiometry assessment results as relates to hearing disorders.
18. Demonstrate knowledge of the interpretation of combined test battery assessment results as relates to hearing disorders.
19. Demonstrate knowledge and skill in family-centred service provision with an emphasis on linguistic and cultural sensitivity, privacy protection and informed consent.
20. Demonstrate knowledge and skill in counselling families about hearing loss and other related concerns.
21. Demonstrate knowledge and skill in the appropriate use of supportive personnel when utilized. (See CASLPO Position Statement on [the Use of Support Personnel by Audiologists.](#))

F) COMPONENTS OF SERVICE DELIVERY

1. DETERMINATION OF NEED



Standard

F.1

Audiologists must perform a determination of need.

Hearing loss affects a child's speech-language, cognitive and social development and academic potential, thus the prompt identification of hearing loss and intervention to mitigate its effects is of critical importance. Any child who is at risk for, suspected of, or identified with an auditory impairment, disorder, or disease and who will potentially benefit from hearing assessment, in terms of ruling out hearing impairment as a cause of the developmental concern; or through identification of hearing impairment, should be assessed for hearing function.

The audiologist must assess the needs and/or capabilities of patients/clients in order to appropriately assess hearing. Child patients/clients will have variable abilities to comply with hearing assessment procedures primarily based on age, but also on developmental level and physical and cognitive capacity.

2. RISK MANAGEMENT



Standard

F.2

Audiologists must use caution and procedures that minimize the discomfort associated with assessment procedures.

Risks of performing the procedures described in this document may include but are not limited to:

- A condition of the physical state of the ear that would contraindicate the performance of the intended procedures.
- A behavioural or other state of the child that would contraindicate the performance of the intended procedures.
- Noise-induced hearing damage due to excessive sound levels being used in the performance of assessment procedures.
- Physical harm to the patient/client in the preparation for hearing assessment procedures such as skin preparation for ABR electrodes, cerumen management in preparation for insertion of probes and phones, etc.

Audiologists must take steps to minimize the above risks associated with performance of the procedures described in this document as well as from the misdiagnosis of either normal hearing, or hearing impairment

3. PROCEDURES



Standard

F.3

The case history information must be used to inform the hearing assessment process.

CASE HISTORY

The purpose of obtaining a thorough case history is to determine the focus of the hearing assessment process. Particularly in the preschool population, time for hearing assessment may be limited by the child's attention and cooperation. Therefore, the audiologist will need to give the most pertinent information the highest priority in order to proceed with appropriate follow-up services. Accurate diagnosis of any hearing impairment will rely on interpretation of the test battery in the context of the child's behaviour and development and may suggest the need for a particular hearing assessment strategy or modification of procedures.

The case history conversation should be family-centred, linguistically and culturally sensitive, and in the language of the parent/caregiver's choice, if possible.



Standard

F.4

Audiologists must obtain or have access to a case history which contains the components specified.

History taking should seek to determine at least the following:

- Source of the referral, and therefore, the professional context for the concern;
- Parent/caregiver and child, as appropriate, statement of concern;
- Observation of child's behaviour, auditory responsiveness, achievement of developmental milestones (especially speech and language milestones);
- History of auditory disease;
- Identification of risk factors and/or symptoms that would contribute to a hearing impairment;
- Previous hearing screening and assessment results.

At the end of the case history conversation, the hearing assessment procedures to be undertaken must be explained to the parent/caregiver as part of the informed consent process.

OTOSCOPYY



Standard
F.5

Audiologists must attempt cursory otoscopy at the start of the hearing assessment. obtain or have access to a case history which contains the components specified.

Cursory otoscopy must be attempted at the start of the hearing assessment. The main purposes are to assist with determining the appropriate direction for coupling techniques, and to detect any anomaly of the external and middle ear that indicates referral to physician or would prevent the insertion of a probe or probe tip into the ear canal.

FREQUENCY SPECIFIC THRESHOLD DETERMINATION



Standard
F.6

Audiologists must attempt to obtain frequency-specific and ear-specific thresholds/threshold estimates using procedures described in this PSG.

Frequency-specific and ear-specific thresholds are the goal of hearing assessment and as such, will be pursued with an efficient and valid strategy. Common features of any hearing assessment protocol for children include the following:

Transducer

In the absence of specific contraindications, insert earphones (ER-3A) are the transducer for air-conduction testing. Insert earphones have several advantages over supra-aural earphones, including reduced acoustic crossover (increased inter-aural attenuation), decreased likelihood of collapsed external ear canals, accurate location of sound delivery, and increased comfort. Supra-aural earphones (TDH/MX41 type) are to be used when insert phones are contraindicated, such as when the ear canals are very small or stenotic or when the child does not tolerate the insert phones. A bone conduction oscillator is also necessary. Establishment of bone conduction thresholds requires accurate and stable placement of the oscillator. If proper force and stability of the oscillator cannot be achieved with the standard headband, a band of elastic fabric with Velcro attachments may be used.

Stimuli

Stimuli employed will represent a portion of the frequency range that holds importance for the acquisition of speech, and the achievement of associated thresholds will allow for appropriate follow-up procedures including the fitting of amplification. Preferred stimuli will include tonepips, or pure tones in the frequency range of 500-4000 Hz, in order to determine if hearing ability is adequate for the development of normal speech and language. As many frequencies as possible should be obtained across the frequency range, contingent upon the

ability of the child to co-operate with test procedures and with a focus on the frequencies of most importance to address the concern about the child's hearing for the child and the reason for referral.

Personnel

In most test situations, it is feasible for a single audiologist to perform hearing assessments for children. However, in the case of preschool-aged children, it is recommended that if a single audiologist performs the role of tester, the tester and instrumentation be inside the soundroom together with the child. If an assistant is used, either to help maintain the child's co-operation or attention, the role of assistant may be assumed by another audiologist or by an individual who is supervised by the audiologist.

Specific procedures for threshold determination will be determined based on the developmental level, skills and abilities of the individual child, and must be based upon one of the techniques described below:

Auditory Brainstem Response (ABR)

For infants less than about six months of age, and for all children who are developmentally unable to reliably perform behavioural assessment, threshold estimation is based on objective, physiologic measures. It is usually possible to obtain accurate, frequency-specific and ear-specific pure-tone threshold estimates by these techniques, typically within 10 dB of conventional audiometric thresholds.² In most cases, tonepip ABR can provide information about the hearing status that can inform appropriate follow-up such as amplification fitting and language development interventions. Unless there are specific contraindications, there should be no reason to delay next steps in the management of infants with hearing impairment until behavioural assessment is possible. As such, ABR threshold estimation methods must be of the highest possible quality.

As in all hearing assessments, in the absence of specific contraindications, insert earphones are the required transducer for ABR testing by air conduction. In the case of ABR, insert phones have several specific advantages including reduced stimulus artifact, decreased background noise, less acoustic cross-over, decreased likelihood of collapsed canals, and increased comfort.

Tonepip ABR threshold estimates by bone conduction will also be required to quantify conductive and sensorineural hearing loss components recognizing the output limits of bone conduction oscillators.

For a complete description of procedures, and technical parameters, see the Ontario Infant Hearing Program Assessment Protocol.³

Click ABR stimuli are no longer used to infer frequency-specific threshold estimates, but do have a role in determining neural integrity specifically where the concern is for retrocochlear

² *Stapells DR. (2000). Threshold estimation by the tone-evoked auditory brainstem response: a literature meta-analysis. J Sp-Lang Pathol Audiol 24:74-83.*

³ *Ontario Infant Hearing Program: Audiologic Assessment Protocol and Support Documentation, 2006 (Available at [Ontario Infant Hearing Program](#))*

pathology, auditory dys-synchrony, and residual hearing. The results of click stimulation in combination with the results of the other hearing assessment components may determine the likelihood of the above auditory disorders and appropriate subsequent activity.

Tonepip ABR thresholds in dBnHL are not directly equivalent to perceptual thresholds in dBHL, and both dBnHL and dBHL are defined with reference to adult norms. ABR thresholds need to be converted to bias-free estimates of true perceptual threshold in dB HL, in order to specify hearing aid prescription parameters and to accurately monitor hearing sensitivity over time.

Behavioural Assessment

With children for whom it is developmentally appropriate, behavioural hearing assessment will form the basis of frequency-specific testing, and procedures will include visual reinforcement audiometry (VRA) or [Conditioned Play Audiometry](#) (CPA).

Note: Behavioural assessment in sound field does not result in sufficient information for proceeding with intervention, if required, and as such is not appropriate for determining auditory thresholds, unless the use of headphones is contraindicated. Sound field measurements may be useful for other purposes, such as initial conditioning for behavioural assessment, demonstration of responsiveness or non-responsiveness or counselling with parents/caregivers.

Visual Reinforcement Audiometry (VRA)⁴

For VRA, children are conditioned to respond to an auditory stimulus by producing a head turn in the direction of a reinforcing visual display. This technique has been shown to be effective in determining frequency-specific thresholds regardless of type or degree of hearing impairment.⁵

The child, seated in the test room, is facing forward with the reinforcing toys at eye level, and ideally at 90 degrees to the right and/or left side(s). Before performing threshold search, it is important to establish that the child will respond to supra-threshold stimuli with the appropriate head-turn response in the direction of the toys. Once the child is determined to be under stimulus control, a standard bracketing procedure is used to search for the minimum level at which the child will respond at each test frequency.

In order to have a measure of the reliability of the infant's head-turn responses, control trials are used at regular intervals in order that the audiologist may determine whether a head-turn response occurs in the absence of auditory stimulation, i.e. false positives.

Conditioned Play Audiometry (CPA)

There is not a body of evidence that defines a CPA protocol, but it is possible to apply a structure similar to that used in VRA, where there is supporting documentation for the use of a well-defined protocol. Therefore, a recommended CPA protocol for determining thresholds may be based in principle on the VRA procedure described by Widen et al. (2000).⁶

⁴ Widen JE, Folsom RC, Cone-Wesson B, Carty L, et al. (2000). Identification of neonatal hearing impairment: hearing status at 8 to 12 months corrected age using a visual reinforcement audiometry protocol. *Ear & Hearing* 21(5):471-487.

⁵ Widen, J.E. (1993). Behavioral screening of high-risk infants using visual reinforcement audiometry. *Seminars in Hearing*, 11(4), 342-356.

⁶ Widen JE, Folsom RC, Cone-Wesson B, Carty L, et al. (2000). Identification of neonatal hearing impairment: hearing status at 8 to 12 months corrected age using a visual reinforcement audiometry protocol. *Ear & Hearing* 21(5):471-487.

CPA assesses a child's hearing acuity using conditioned responses to sound by engaging in play-oriented activities. The child will be conditioned to perform a specific play-based activity each time a stimulus is heard. Activities might include putting a block in a bucket, placing a peg in a hole, etc. The challenge in the conditioning of the child for CPA is to accomplish the wait-listen-respond paradigm that will allow for a reliable outcome. Air conduction thresholds are obtained and bone conduction thresholds are obtained as indicated using this procedure.

iv) Conventional Audiometry

By the time children have mastered CPA, conventional audiometry becomes the most efficient and appropriate procedure for obtaining frequency-specific information during hearing assessment. For details on conventional audiometry, refer to the CASLPO PSG for [Hearing Assessment of Adults by Audiologists](#).

OTOACOUSTIC EMISSIONS



Standard
F.7

Audiologists must attempt to measure acoustic immittance or its components as part of a complete hearing assessment for children.

Otoacoustic emissions provide an objective assessment of peripheral or preneural auditory function. They are useful in the process of providing objective hearing screening, and also contribute to the identification and monitoring of auditory neuropathy or dys-synchrony.

OAEs should be included in a protocol for assessing hearing in children who either present with a condition that may be associated with a hearing loss or present with a risk factor for late onset or progressive hearing loss. Additionally, if there is any uncertainty about the reliability of threshold estimates, OAE measurement may be used for cross-check of results.

OAE measurements do not yield threshold estimates and cannot determine whether a child does or does not have hearing impairment. However, there is a relationship between OAE amplitude and the severity of hearing impairment. For hearing levels greater than about 40 dB, an OAE is unlikely to be observed at the frequency of the loss.

MIDDLE EAR ANALYSIS

Middle Ear Analysis (MEA) includes tympanometry (measurement of acoustic immittance or its components) as well as measurement of stapedius muscle reflexes (reflexes).



Standard

Audiologists must use a 1 kHz probe frequency when performing middle ear analysis on children less than six months of age a 226Hz probe frequency corrected age.

F.8

For infants up to and including six months corrected age, tympanometry must be done using a 1 kHz probe frequency.⁷ For children over six months corrected age, in general, tympanometry is done using a 226 Hz probe frequency.

Guide

F.1

Audiologists should attempt to measure stapedius muscle reflex thresholds as part of a complete hearing assessment for children.

The measurement of reflexes should be attempted wherever feasible. Because reflexes are absent in a high proportion of newborns and young children who have no evidence of a middle-ear disorder when using contralateral measurements, and with low-frequency probe tones, the presence or absence of reflexes should also be measured in the ipsilateral mode with a 1 kHz stimulus and a 1 kHz probe for children less than six months of age.

Reflex presence is defined by a clear, negative decrease in acoustic immittance that is repeatable at any stimulus level.

SPEECH-BASED MEASURES

Guide

F.2

Audiologists should attempt speech-based measurement procedures when relevant to the hearing concern or reason for referral.

In a behavioural hearing assessment, and at the discretion of the audiologist, air-conduction thresholds for Speech Awareness (SAT) or the Speech Recognition (SRT) may be established for each ear for the purposes of cross-checking behavioural thresholds obtained with frequency-specific stimuli or to assist in conditioning. Word recognition testing can be used as a gross measure of auditory perception; however, these measures do not provide frequency-specific information and cannot be used as a basis for subsequent referral or intervention including hearing aid fitting.

For school-aged children, speech-based measures take on added significance when the concern is for auditory processing abilities or other related learning activities. For detail on the procedures involved in this assessment, please refer to the PSG for Hearing Assessment of Adults by Audiologists (in progress).

⁷ Margolis RH, Bass-Ringdahl S, Hanks W, Holte L, Zapala D. (2003). Tympanometry in newborn infants – 1 kHz norms. *JAAA* 14(7):386-395.

REAL EAR TO COUPLER DIFFERENCE MEASUREMENT



Standard

F.9

Audiologists must attempt RECD measurements when relevant for follow-up procedures and referral

Real Ear to Coupler Difference measurements⁸ are an obligatory component of the provision of hearing aids for children.

Additionally, the degree of hearing loss established during hearing assessment has the potential to be misinterpreted when it is based on the audiometer dial reading either from behavioural assessment or when obtained from corrected ABR thresholds (dBeHL) because it does not take into account the unique acoustics of the child's ear. In order to resolve this misinterpretation, the definition of threshold can be converted to SPL, and the HL audiogram can be adjusted to accurately reflect the degree of loss by incorporating RECD measurements into the assessment reporting procedures. This is important in terms of definition of the hearing loss, counselling, and the choosing of appropriate treatment strategies. In the event that the individual RECD measurement is unobtainable, age-related predicted values can be applied.⁹

FOLLOW-UP AND DISCHARGE



Standard

F.10

The audiologist must make appropriate referrals when the presenting condition requires intervention that goes beyond audiologic management.

Upon referral, the audiologist assesses the determination of need of the child, his/her competence in performing the required procedures, and assesses risk. If appropriate, the audiologist proceeds with audiologic hearing assessment of the child and, dependent upon the outcome, (e.g., identification of hearing impairment, if any), offers to provide or initiates the involvement of other providers, as required. The sequence of procedures is as follows:

- Audiologic hearing assessment of the child by audiologist including review of results with the parent/caregiver and child as appropriate. In the event that the results indicate normal

⁸ Moodie, K.S., Seewald, R.C., & Sinclair, S.T. (1994). Procedure for predicting real ear hearing aid performance in young children. *American Journal of Audiology* 3, 23-31.

⁹ Ontario Infant Hearing Program: Protocol and Support Documentation for the Provision of Amplification, 2005 (Available at [Ontario Infant Hearing Program](#))

hearing recommendations for follow-up must include information on risk indicators for late onset and progressive hearing impairment, information on speech and language developmental milestones, and signs and symptoms of hearing loss;

- Medical assessment/evaluation (required when any permanent hearing impairment is identified);
- Referral for services to support the psychological needs of the parent/caregiver and to help with decision-making will assist the timely access to intervention and language development services;
- Referral for, or provision of, information on amplification options is made when results of the hearing assessment indicate the child is a candidate for hearing aids, cochlear implants or other assistive devices;
- Audiologic Rehabilitation (as required);
- Hearing reassessment/hearing aid re-evaluation (required if chosen by the family).



Standard
F.11

Audiologists must inform the patient/client of appropriate support and intervention services or refer so that the patient/client can be provided with the appropriate information.

Intervention services to support the language development and early literacy skills of children identified with hearing impairment are of critical importance to the optimal development of the child and preparation for academic success. Unbiased, evidence-based information regarding services to support language development must be given to the family in order that they can make informed decisions regarding service delivery for their child. (as required);



Standard
F.12

Audiologists must discharge the patient/client when therapeutic goals are met.

Discharge of the patient/client must occur when certain basic therapeutic goals have been met including:

- Normal hearing is identified, and recommendations are given that include information on risk indicators for late onset and progressive hearing impairment, signs and symptoms of hearing loss, and speech and language developmental milestones, where appropriate.

- If the identified hearing impairment is determined to be conductive in type, information is provided that includes the implications of the audiologic diagnosis. Recommendation for medical treatment and management is provided, and in the instances where follow-up hearing assessment may not be required.
- If the identified hearing impairment is determined to be mixed or sensorineural in type, information is provided that includes the implications of the audiologic diagnosis and recommendations for follow-up. These may include the need for medical treatment and management, information on amplification options, the importance of early intervention and the need for services to support language development, and transition to another service provider is arranged.

G) GLOSSARY

Assessment

Use of formal or informal measures by an audiologist or speech-language pathologist, in accordance with the member's scope of practice, to determine a patient/client's functioning in a variety of areas of functional communication and/or swallowing or hearing, resulting in specific treatment recommendations.

Child

A person 18 years of age and under. In some situations, this PSG may apply to individuals above the age of 18, for example in the education system, where some individuals attend secondary school until the age of 21.

Intermediate Level Disinfection

Level of disinfection required for some semi-critical items. Intermediate level disinfectants kill vegetative bacteria, most viruses and most fungi but not resistant bacterial spores.

Intervention

Includes any member or supportive personnel involvement in the provision of member services to patients/clients, including but not limited to screening, assessment, treatment and management.

Low Level Disinfection

Level of disinfection required when processing noncritical items or some environmental surfaces. Low level disinfectants kill most vegetative bacteria and some fungi as well as enveloped (lipid) viruses (e.g., hepatitis B, C, Hantavirus and HIV). Low level disinfectants do not kill mycobacteria or bacterial spores. Low level disinfectants-detergents are used to clean environmental surfaces.

Noncritical Items

Those items that either touch only intact skin but not mucous membranes or do not directly touch the patient. Reprocessing of noncritical items involves cleaning and/or low level disinfection.

Patient/Client

Individual with a possible or confirmed communication and/or swallowing disorder, who is meant to benefit from a member's intervention.

Screening

Screening is a process where a member applies certain measures that are designed to identify patients who may have a hearing, balance, communication, swallowing or similar disorder[s], for the sole purpose of determining the patient's need for a speech-language pathology assessment, an audiological assessment, or both. This does not include:

- a. Inadvertently noticing possible hearing, balance, communication, swallowing or similar disorder[s], or
- b. Considering information that is shared about an individual's possible hearing, balance, communication, swallowing or similar disorder[s], for the purpose of

providing general educational information and/or recommending a referral for a speech-language pathology screening or assessment, an audiological screening or assessment, or both.”

Interpretation and communication of the results of a screening are limited to advising the individual on whether or not there may be a need for a speech-language pathology assessment and/or an audiological assessment and must not be used for treatment planning.

Semi-critical Items

Devices that come in contact with nonintact skin or mucous membranes but ordinarily do not penetrate them. Reprocessing semi-critical items involves meticulous cleaning followed preferably by high level disinfection (level of disinfection required is dependent on the item. Depending on the type of item and its intended use, intermediate level disinfection may be acceptable.

Treatment

An intervention that has as its goal to enhance the communication and/or swallowing skills of the patient/client.