

# **A Manual for Screening Hearing and Middle Ear Function in Wyoming Infants, Toddlers, and Preschoolers**



Wyoming Early Hearing Detection and Intervention (EHDI) Program

Behavioral Health Division  
Wyoming Department of Health

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The primary function of the middle ear is to transfer movements of the eardrum through the ossicular chain to the fluid in the inner ear. The ossicular chain is composed of the three smallest bones in the body – the malleus, the incus, and the stapes. The malleus is attached to the eardrum and moves in synchrony with it. (You can often identify the malleus during otoscopic inspection of the ear). The malleus is attached to the incus, which in turn is attached to the stapes. These three bones form a bridge across the middle ear space and transmit sound vibrations to the fluid medium of the inner ear.

NOTES

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Gross Division	Outer Ear	Middle Ear	Inner Ear	Central Auditory Nervous System
Anatomy				
Mode of Operation	Air Vibration	Mechanical Vibration	Mechanical, Hydrodynamic, Electrochemical	Electrochemical
Function	Protection, Amplification, Localization	Impedance matching, Selective oval window stimulation, Pressure equalization	Filtering distribution, Transduction	Information processing

Figure 1: Cross section of the human ear, showing divisions into outer, middle, and inner ears. Below are listed the predominant mode of operation of each division and its suggested function. (Adapted from Ades and Engstrom, 1974; Dallos, 1973, by permission)



## Auditory Nervous System

## NOTES

The auditory nervous system (Fig. 3) is composed of the auditory nerve (eighth cranial) and its associated pathways to the brain. The nerve impulses initiated by the bending of the hair cells on the organ of Corti travel along many of the thirty thousand fibers of the auditory nerve. These fibers twist as a wire cable and progress through a bony canal (internal auditory canal) entering the lower portion of the brain stem. From the brain stem the fibers progress along a well-defined pathway to their final destination in the auditory portion of the temporal lobe of the brain. The interpretation of sound that takes place along this pathway and within the brain is not completely understood.

To summarize, sound enters the outer ear and is known as air-born energy. Sound passes through the eardrum, sets the ossicles in motion and becomes mechanical energy. As the sound enters the cochlea, it is referred to as hydraulic energy. The term peripheral refers to the portion of the auditory system up to and including the outer hair cells in the cochlea. From the outer hair cells to the auditory cortex is known as the central auditory mechanism.

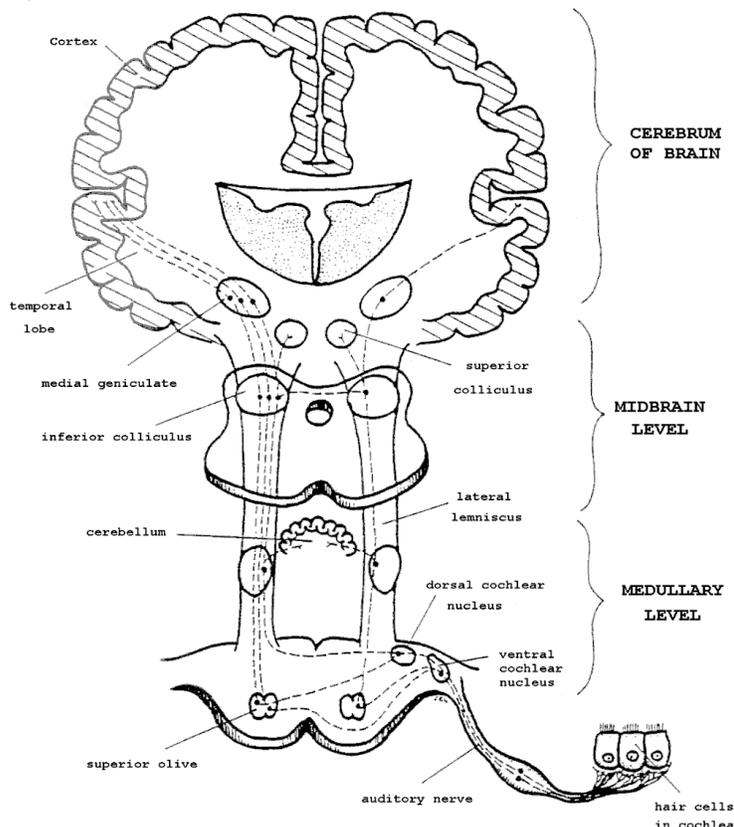


Figure 3: Auditory pathway of the central nervous system





























## COMPONENTS OF HEARING SCREENING

## NOTES

There are three components of hearing screening: 1) otoscopic inspection, 2) pure tones (PTs) or otoacoustic emissions (OAEs) and 3) immittance screening. All children should be screened with all three components. (Exception: children with audiometrically documented permanent hearing loss do not need to be screened with PTs or OAEs). A child failing any portion of the screening in either ear should be rescreened (with all three components and in both ears) within 4-6 weeks. A child who fails a rescreen should be referred for further evaluation by an audiologist or a physician. (The referral process will be discussed in detail later).

The Joint Committee on Infant Hearing (JCIH) recommends the following indicators for use with neonates or infants. These risk factors identify an infant at risk for progressive or delayed-onset sensorineural hearing loss and/or conductive hearing loss. Any infant with these risk factors for progressive or delayed onset hearing loss who has passed the birth screen should receive audiologic screening annually in Wyoming or anytime there is a concern about hearing status. These indicators are as follows:

- a) Parental or caregiver concern regarding hearing, speech, language, and/or developmental delay.
- b) Family history of permanent childhood hearing loss.
- c) Stigmata or other findings associated with a syndrome known to include a sensorineural or conductive hearing loss or Eustacian tube dysfunction.
- d) Postnatal infections associated with sensorineural hearing loss including bacterial meningitis.
- e) In utero infections such as cytomegalovirus, herpes, rubella, syphilis, and toxoplasmosis.
- f) Neonatal indications – specifically hyperbilirubinemia at a serum level requiring exchange transfusion, persistent pulmonary hypertension of the newborn associated with mechanical ventilation, and conditions requiring the use of extracorporeal membrane oxygenation (ECMO).
- g) Syndromes associated with progressive hearing loss such as neurofibromatosis, osteopetrosis,



















































## FREQUENTLY ASKED QUESTIONS (FAQ)

## NOTES

### **What is the difference between hearing screening and hearing assessment?**

Both are critical steps in the identification of hearing loss.

#### Screening

1. Uses pass/fail criteria
2. Performed by trained SLP, auditory screeners, or support personnel
3. Implies the same protocol is used for every child
4. Purpose is to identify children who may have hearing loss

#### Assessment

1. Establishes hearing thresholds
2. Performed by audiologist
3. Uses a variety of techniques selected for a particular individual
4. Purpose is to determine if hearing loss exists

### **For children with significant developmental delays is it OK to screen on several different occasions to get all pure tone frequencies completed?**

If the child is conditioned to respond to PT screening but physical disabilities make this a slow process it is acceptable to conduct the screening in different sessions within a 4-5 day period but not over weeks or months. If you think the child's developmental level is affecting the reliability of the PT screening, use OAE instead. It is better to obtain OAE screening in a timely manner than to extend PT screening over weeks or months.

### **If a child does not respond to PT screening and they are over three years of age, is OAE an acceptable substitute? Should I refer to an audiologist if the child passes OAE and immittance screening but I could not condition them to respond to PT screening?**

A developmental age of three years is a guideline for using PT screening. For example, a child over three years of age with multiple disabilities may not developmentally be able to participate in PT screening and OAE screening is an appropriate substitute. PT screening is more sensitive (screens at a softer level) and should be used when possible – don't be





compliance is present. In the situation you described, the immittance screening should be repeated immediately. If you continue to get a tympanogram graph that does not reflect the normal compliance and MEP values displayed by your immittance bridge, contact the equipment manufacturer or their representative to inquire about the repair of your equipment.

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**Why doesn't my child's physician treat or have concerns about negative middle ear pressure?**

Negative MEP in and of itself is not a disease process. It is known to occur before and after effusion though it is difficult to determine "where" a child is in that process. When an initial screening identifies MEP > -250 daPa, one of the two things will typically be found at the rescreening 4-6 weeks later: it got better (MEP < -250 daPa) or it got worse (MEP > -250 daPa or a flat tympanogram). If the rescreening shows > -250 MEP, an abnormal condition has been identified and it is the physician's decision as to how to manage a particular child.

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**When negative MEP is noted should I suggest to parents that they give their child allergy or cold medication?**

These medications are readily available but it is not recommended that you make this suggestion to parents. The child may be taking prescription medication that could interact with over-the-counter medication so recommendations for their use should come from the physician.

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**What does low TM compliance mean and what causes it?**

Low TM compliance, measured by tympanometry, means the eardrum doesn't move as much as it should as air is pushed against it. When there is something abnormal in the middle ear space (behind the eardrum) such as fluid, the eardrum becomes stiff; i.e., doesn't move as it should, and tympanometry measures this as low compliance.

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**Are middle ear disease, fluid, and effusion the same things?**

For the purpose of hearing screening and throughout this manual the terms are used interchangeably.

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**Can you get a false REFER on the OAE?**

NOTES

If the probe fit is poor, the room is too noisy or the child is too active OAE screening may REFER a child with normal hearing. Check probe fit, etc. and immediately readminister the OAE screening. A REFER at that point (assuming immittance measures are within normal limits) should be followed with a referral for audiological evaluation.

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**Will tubes cause a child to REFER on OAE screening?**

Not necessarily, but it may. If there is evidence that the tubes are open (i.e., middle ear free from effusion) sound will efficiently reach the hair cells in the cochlea and the child with normal cochlear function will produce an emission. However, the presence of the PE tube may keep the OAE from being detected by the equipment. If the middle ear appears clear based on your immittance screening results and the OAE REFERS, the child should be referred for audiological evaluation.

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If the tubes appear to be plugged (normal PV and low compliance) effusion is suspected. Effusion causes hearing loss which can produce a REFER on OAE screening. In this example: 1) refer to physician; 2) rescreen within 3-4 weeks after medical treatment; 3) if immittance screening is passed and OAEs are failed, 4) refer for audiologic assessment.

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**I'm confused. Does OAE identify conductive or sensorineural hearing loss?**

A failed OAE does not identify the type of hearing loss that may be present. It simply means that not enough sound reached the hair cells in the cochlea to generate an emission. Hence, an OAE REFER can be the result of hearing loss due to effusion (conductive) and/or because the child has a sensorineural hearing loss.

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**If a child fails immittance should I proceed with OAE/PT screening?**

All children being screened (or rescreened) should receive all three components of screening: otoscopic inspection, immittance, and OAE/PT. By administering and recording results of all components more information is available about a

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**REFERRAL AND MANAGEMENT CHART FOR SCREENING  
CHILDREN WITH AND WITHOUT RISK FACTORS<sup>a</sup>**

	<b>Audiological Referral</b>	<b>Medical Referral; Screen 1 mo after Rx and/or exam.</b>	<b>Annual Screening</b>	<b>Screen every 6 mo. until 3 yrs. old</b>	<b>Screen Immittance every 6 mo</b>
<b>RISK FACTORS PRESENT</b>					
Pass PT/OAE Pass Immittance			After age 3	1	
Fail PT/OAE Pass Immittance	1		After age 3	2 (Permanent hearing loss NOT identified)	2 (Permanent hearing loss identified) <sup>b</sup>
Fail Immittance Pass PT/OAE		1	After age 3	2 (once ME problem is resolved)	
Fail PT/OAE Fail Immittance	2 (once ME problem is resolved)	1		3 (Permanent hearing loss NOT identified)	3 (Permanent hearing loss identified) <sup>b</sup>
<b>NO RISK FACTORS PRESENT</b>					
Pass PT/OAE Pass Immittance			1		
Fail PT/OAE Pass Immittance	1		2 (Permanent hearing loss NOT identified)		2 (Permanent hearing loss identified) <sup>b</sup>
Fail Immittance Pass PT/OAE		1	2 (once ME problem is resolved)		
Fail PT/OAE Fail immittance	2	1	3 (Permanent hearing loss NOT identified)		

<sup>a</sup> Risk factors include: Parental or caregiver concern regarding hearing, speech, language, and or developmental delay.

Family history of permanent childhood hearing loss.

Stigmata or other finding associated with a syndrome known to include a sensorineural or conductive hearing loss or Eustachian tube dysfunction.

Postnatal infections such as cytomegalovirus, herpes, rubella, syphilis, and toxoplasmosis.

Neonatal indicators-specifically hyperbilirubinemia at a serum level requiring exchange transfusion, persistent pulmonary hypertension of the newborn associated with mechanical ventilation, and conditions requiring the use of extracorporeal membrane oxygenation (ECMO).

Syndromes associated with progressive hearing loss such as neurofibromatosis, osteopetrosis, and Usher's syndrome.

Neurodegenerative disorders, such as Hunter syndrome, or sensory motor neuropathies, such as Friedreich's ataxia and Charcot-Marie-Tooth syndrome.

Head trauma.

Recurrent or persistent otitis media with effusion for at least 3 months.

<sup>b</sup> Children identified with a permanent hearing loss should have hearing monitored by an audiologist.

1 = First action step; 2 = Second action step; 3 = Third action step.

**REFERRAL AND MANAGEMENT CHART FOR SCREENING  
CHILDREN WITH VENTILATION TUBES**

	<b>Audiological Referral</b>	<b>Medical Referral; Screen 1 mo after Rx and/or exam</b>	<b>Screen every 6 mo</b>	<b>Screen Immittance every 6 mo</b>
Pass PT/OAE Immittance → open tube(s)			1	
Pass PT/OAE Fail Immittance		1	2 (Once ME problem is resolved)	
Fail PT/OAE Immittance → open tube(s)	1		2 (Permanent hearing loss NOT identified)	2 (Permanent hearing loss identified) <sup>b</sup>
Fail PT/OAE Fail Immittance	2 (once ME problem is resolved)	1	3 (Permanent hearing loss NOT identified)	3 (Permanent hearing loss identified) <sup>b</sup>

<sup>b</sup> Children identified with a permanent hearing loss should have hearing monitored by an audiologist.

1 = First action step; 2 = Second action step; 3 = Third action step.

## GLOSSARY

**acoustic reflex**- The contraction of one or more muscles of the middle ear in response to the presentation of a loud stimulus.

**acquired**- Obtained or developed subsequent to birth (post-natally).

**acuity**- The sharpness, clearness, or distinctness with which one is able to hear a sound.

**adenoids** - A mass of lymph (tonsil-like) tissue surrounding the Eustachian tubes in the back of the throat and/or nasopharynx.

**air conduction** - A term denoting the movement of the sound waves through the air. For example, a hearing test conducted with ear phones is called an "air conduction" hearing test inasmuch as the sound waves move through the external ear canal striking the ear drum.

**ambient noise** - Any noise exclusive of an intentional signal in a test room environment. The noise may come from outside or from within the room.

**atresia** - The absence or closure of the external or middle ear.

**attenuate** - The reduction in intensity of tone or speech sounds.

**attenuator** – The dial on an audiometer that increases and decreases the loudness of a signal.

**audiogram** - A record of hearing levels measured at several different frequencies. A graphic picture of hearing at a particular point in time.

**audiologist** - An individual who is professionally trained to administer and interpret hearing evaluations.

**audiology** - The science of hearing; particularly the hearing function. It is a diagnostic profession concerned with the determination of the type of hearing loss being manifested by a particular individual.

**audiometer** - Electronic equipment used to screen or assess hearing acuity.

**audiometry** - Refers to the technique of measuring hearing. Measurements may be made of the auditory response to any of several auditory stimuli, but fixed-frequency pure tones and speech sounds are most commonly used.

**auditory** - Pertaining to the ear or the organs of hearing.

**auditory brainstem response (ABR)** – An objective technique to evaluate hearing which involves placing electrodes on the head and recording brain wave activity from the brainstem as sounds are presented.

**auditory neuropathy spectrum disorder (ANSO)** – A disorder in the efficient transmission of sound somewhere from the inner hair cells of the cochlea to the brainstem.

**auditory nerve** - Sensory nerve (VIII cranial nerve) composed of fibers which arise from the cochlea and vestibular apparatus terminating in the brain stem.

**automated auditory brainstem response (AABR)** – Objective technique used to screen newborns.

**bone conduction** - The process by which sound is conducted to the inner ear through the cranial bones.

**brainstem** - The bundle of nerve fibers which is located below the cerebrum and above the spinal cord.

**central auditory processing disorder ((C)APD)** – A child’s inability to efficiently use what they hear in spite of normal hearing acuity. (C)APD testing is administered in a sound room by an audiologist. Normative data is available for children six years of age.

**central auditory nervous system** – That part of the auditory mechanism just past the hair cells in the cochlea up to and including the auditory cortex.

**cholesteatoma** – A pearl-like growth that may develop in the middle ear space as the result of debris entering the middle ear through a perforation.

**cochlea** - The snail shaped fluid filled cavity which serves as the receptor for hearing.

**cochlear implant** – A surgically implanted device designed for individuals with severe-to-profound hearing loss who do not receive adequate benefit from hearing aids.

**conditioned play audiometry (CPA)** – Technique used to screen or evaluate hearing which includes conditioning the child to perform a task (e.g., drop a block into a bucket) in response to a sound.

**conductive hearing loss** - An interference with the movement of the sound wave as it passes through the external and middle ear on its way to the inner ear. A conductive hearing loss usually can be corrected and/or improved via medical treatment.

**congenital** - Existing at birth. Could be a hereditary condition.

**decibel (dB)** - A unit of sound intensity (loudness).

**discrimination score** - A percentage score which reflects a person’s ability to understand (clearly hear) speech. (See word recognition score).

**ear drum** - Also known as the tympanic membrane. A thin, translucent membrane which moves

in response to sound waves traveling through the external auditory canal.

**educationally significant hearing loss** – Audiologically it is: a) pure tone average (500-2000 Hz) of at least 20 dB in the better ear, or b) an average high frequency loss of at least 35 dB in the better ear for two or more of the following frequencies, 2000, 4000, or 6000 Hz, or c) a permanent unilateral hearing loss of 45 dB or greater.

**endolymph** - The fluid found within the scala media.

**E.N.T.** - Refers to a physician whose practice is confined to the treatment of disorders of the ear, nose, and throat. Otorhinolaryngologist is synonymous with E.N.T.

**environmental sound** - Sounds that surround us in our everyday life. See ambient noise.

**Eustachian tube** - A tube-like passageway which extends from the middle ear cavity to the back of the throat (nasopharynx). There is one Eustachian tube for each ear. Adenoidal tissue usually surrounds the Eustachian tube openings at the back of the throat. Abnormal Eustachian function is evidenced by negative middle ear pressure.

**external auditory canal** - A cylindrical passageway which funnels sound waves from the pinna to the eardrum.

**frequency** - The number of vibrations per second; written as Hz (Hertz).

**gradient** – Characterizes the steepness of the tympanogram or the acuteness of the angle at its peak.

**hair cells** – Microscopic cells in the cochlea that begins the transmission of sound from the inner ear to the auditory nerve. If damaged or absent, sensorineural hearing loss results.

**heredity** - The passing of genetic qualities through ancestry.

**Hertz (Hz)** - The international term for cycles per second. See frequency.

**identification audiometry** - Refers to the application of hearing screening and testing procedures to persons for the purpose of identifying those individuals with hearing acuity less than generally defined as within normal limits.

**immittance measures** – An objective technique to assess the integrity and function of the middle ear system.

**incus** - The second or middle bone of the ossicular chain, which is located between the malleus and the stapes.

**internal auditory canal** - A tube-like passageway in the temporal bone which houses the auditory nerve.

**interrupter switch** -The tone presentation control on an audiometer.

**malleus** - The first bone of the ossicular chain which is attached to the ear drum and to the incus. It is the largest one in the ossicular chain.

**mastoid** - A bone composed of a series of air filled cells located behind the middle ear cavity.

**middle ear cavity** - A small air filled space which houses the ossicular chain and from whence the Eustachian tube originates.

**middle ear compliance** - Relates to the mobility of the middle ear system.

**middle ear pressure** - Relates to the air pressure within the middle ear cavity (either positive or negative daPa). The point of maximum compliance.

**mixed hearing loss** - A hearing loss which has both a conductive and sensorineural component.

**noise** - Any unwanted sound.

**noise induced hearing loss** - A term referring to the slowly progressive sensorineural hearing loss that results from exposure to intermittent and/or continuous loud noise.

**non-organic hearing loss** - A loss of hearing for which there is no known organic basis.

**organ of Corti** - The highly sensitive receptor of hearing which contains the hair cells and the auditory nerve endings. It is housed within the cochlea.

**ossicles or ossicular chain** - The bridge of three small bones (malleus, incus, and stapes) across the middle ear cavity.

**otitis media** - Inflammation of the middle ear.

**acute:** An inflammation of the middle ear lasting for a short period of time.

**chronic:** A long-term or continuing inflammation of the middle ear.

**otoacoustic emission (OAE)** – An objective technique to screen or assess hearing. Emissions are sounds generated within the cochlea that can be measured in the ear canal.

**otologist** - A physician whose practice is confined to the medical treatment of ear disorders.

**otology** - The branch of medicine that is concerned with the ear.

**oval window** - A small opening, covered by a thin membrane, in the cochlea which accommodates the footplate of the stapes.

**perilymph** - The fluid found in the scala, vestibuli and scala tympani.

**peripheral auditory nervous system** – The part of the auditory mechanism up to and including

the hair cells in the cochlea

**physical volume** - The amount of space (in ml or cc) between the probe tip and wherever the air cannot get any farther (usually the tympanic membrane). Measured by applying +200 daPa.

**pinna** - The most visible portion of the external ear.

**pure tone** - A single frequency sound without accompanying overtones or other sounds.

**pure tone average (PTA)** – Computed by averaging the thresholds in each ear at 500, 1000, and 2000 Hz or in the case of a high frequency hearing loss, 500 and 1000 Hz may be used.

**reliability** - Repeatability.

**responsible person** - Individual who is assigned to ensure that timely follow-up occurs between identification audiometry and the initiation of appropriate services. This person must have a thorough understanding of the services available within a community and must be willing to make necessary phone calls.

**roster** – Form used to record children’s names and their screening results.

**round window** - A small opening in the cochlea, covered by a thin membrane, located below the oval window.

**rubella** - German measles.

**scala media** - The middle fluid filled tunnel of the cochlea which houses the organ of Corti.

**scala tympani** - The outer fluid filled tunnel of the cochlea which communicates with the middle ear via the round window.

**scala vestibuli** - The fluid filled tunnel of the cochlea which communicates with the middle ear via the oval window.

**sensitivity** – Ability of a test or measure to identify individuals with the target disorder.

**sensorineural hearing loss** - A dysfunction of the sensory or neural structures of the ear. This disorder generally cannot be reversed.

**sound field testing** – Audiologic assessment using speakers rather than earphones.

**sound level meter** - An instrument used to measure sound levels in decibels. It is used in conjunction with the artificial ear when performing calibration.

**specificity** – Ability of a test or measure to identify individuals that do not have the target disorder.

**speech reception threshold (SRT)** – The softest level that an individual can identify 50% of the spondees presented; reported on an audiogram.

**spondees** – Two-syllable words with equal emphasis on each syllable; e.g., cowboy, airplane. Used to obtain a speech reception threshold.

**stapes** - The third and smallest bone of the ossicular chain which located between the incus and the oval window.

**technician** - An individual who, after appropriate training, has the skills necessary to administer hearing screening.

**threshold of hearing** - The intensity of a stimulus that will just barely produce a sensation. In pure tone audiometry, threshold is defined as the minimal hearing level at which an individual is able to respond to a tone at least fifty per cent of the time. It is this minimal hearing level that is plotted on an audiogram indicating an individual's best level of hearing for that frequency.

**tympenic membrane** - Ear drum.

**tympenogram** – The graphic representing the change in the mobility of the eardrum as air pressure is changed.

**tympenometric width (TW)** – The pressure interval of a tympenogram, corresponding to a 50% reduction in the compliance.

**tympenometry** - Measurement of the change of middle ear compliance as air pressure is altered in the ear canal.

**tympenoplasty** – A surgical procedure to repair or graft a perforated eardrum.

**tone** - A sound wave perceived as an auditory sensation of definite pitch.

**unilateral hearing loss (UHL)** – A significant hearing loss in one ear while the other ear exhibits thresholds  $\leq 15$  dB.

**validity** - A valid test-a test which tests what it is supposed to test.

**ventilation (P.E.) tubes** - Surgically placed "bobbins" inserted in the tympenic membrane to equalize middle ear pressure and/or to prevent the accumulation of middle ear fluid.

**vestibular apparatus** - The organ of balance located in the inner ear. Sometimes referred to as the semicircular canals.

**visual reinforcement audiometry (VRA)** – A sound field audiometric technique used to evaluate the hearing of a young child. When the child localized the presented signal she/he is

reinforced with a blinking light.

**word recognition score** – A percentage score reflecting an individual's ability to discriminate single syllable words from a phonetically balanced word list. (See discrimination score).

## Appendix A

### STATE OF WYOMING: DEPARTMENT OF EDUCATION OUTREACH SERVICES FOR INDIVIDUALS WITH HEARING LOSS

#### **Outreach Services for the Deaf and Hard of Hearing**

Outreach Services for the Deaf and Hard of Hearing (Outreach) is part of the Special Programs Unit of the Wyoming Department of Education. The supervisor, consultants, and librarian have a long-standing commitment to providing vital links among families, service providers, and the medical community. Their statewide presence plays a key role in the continuity of services available to all children (birth-21) who are deaf or hard of hearing. To facilitate that role, Outreach has developed strong, collaborative relationships with the EHDI Program, the Wyoming Chapter of Hands and Voices, Child Development Centers, and school districts.

Consultants for Outreach provide training and consultation to early interventionists, special education personnel, administrators, and general education teachers. These services can be provided on site or via the WEN (Wyoming Equality Network) system. This video conferencing system is in every high school in the state and allows a very rural state such as ours to be connected. Trainings include a variety of topics; for example:

- The role of hearing in the acquisition of language and literacy skills for all children
- Transition considerations
  - Following identification of hearing loss at birth and into early intervention services
  - Early intervention into kindergarten
  - Elementary school to secondary school
  - Secondary school to higher education and/or the workplace
- Assistive technology for students who are deaf or hard of hearing
- Information pertaining to formal and informal assessments to assist in IFSP/IEP development
- Classroom amplification
- Connecting the needs of students who are deaf/hard of hearing to the general curriculum
- Sign language classes
- Facilitating success in the regular environment for students who are deaf/hard of hearing
- Hearing screening program improvement and the movement to a state-wide tracking system
- Impact of hearing loss on educational performance
- Facilitating language development before and after cochlear implantation
- Information about the Educational Interpreters Proficiency Assessment (EIPA)
- Trouble-shooting hearing aids and facilitating hearing aid use

Each year Outreach sponsors WY-HI, a one day, state-wide event for students who are deaf or hard of hearing. Activities are available for infants, toddlers, and school age children. In addition to an instructional/educational element, the event provides a social function for students. Many parents, siblings, and service providers attend the event as well and it brings to

light the fact that our students with hearing loss are, first of all, “just kids”. The information and registration brochure is sent throughout the State and participation has increased each year.

Outreach collaborates with the Wyoming Department of Health to provide three, 1 ½ day Hearing Screening Trainings each year. An Outreach Consultant is available to you at each training. Outreach also sponsors a Deaf Education series each year via the WEN system. Current and timely topics are covered, PTSB credit is available, and there is no cost to participate.

The Outreach Library, one of the largest outreach libraries in the country specific to deaf and hard of hearing individuals, has numerous resources available for students, interpreters, service providers, and families. Early intervention providers will find programs and materials for language development and auditory/listening training, communication options, and parent-friendly information about hearing loss, hearing aids, and cochlear implants. Videos, books, DVDs, and educational toys are available for school age children and many resources about self-advocacy and transition from high school are available for older students.

Library materials are available to students, families, and service providers throughout the State. Simply contact the librarian or an Outreach Consultant and materials will be shipped to you; you can keep them as long as you need them. The Library, located in Casper, is open Monday-Friday. The next time you are in Casper, you are encouraged to spend some time at the Library familiarizing yourself with the many resources available.

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## Appendix C

### SPECIAL EDUCATION DIRECTORS IN WYOMING PUBLIC SCHOOLS

For the most current contact information, please refer to <http://www.wyrid.org/WSED.htm>

## Appendix D

### WYOMING CHILD DEVELOPMENT CENTERS

Region	Center	Address	Director	Phone	Fax
1	Children's Resource Center	558 East 2 <sup>nd</sup> (PO Box 1191) Powell, WY 82435	Mitch Brauchie	754-2864	754-9829
1	Children's Resource Center	1313 Big Horn Avenue (PO Box 1393) Worland, WY 82401	Mitch Brauchie	347-8677	347-3292
1	Children's Resource Center	808 North Street (PO Box 2901) Cody, WY 82414	Mitch Brauchie	527-7060	527-7784
1	Children's Resource Center	115 South 4 <sup>th</sup> Street (PO Box 882) Basin, WY 82401	Mitch Brauchie	568-2914	568-2914
1	Children's Resource Center	130 Highway 20 (PO Box 943) Thermopolis, WY 82443	Mitch Brauchie	864-9227	864-2296
1	Children's Resource Center	435 East 5 <sup>th</sup> Street Lovell, WY 82431	Mitch Brauchie	548-6722	548-6722
2	Child Development Center	345 South Linden Avenue Sheridan, WY 82801	Sandra O'Dell	672-6610	674-5947
2	Child Development Center	1 North Desmet Buffalo, WY 82834	Sandra O'Dell	684-9271	684-0141
3	Weston County Children's Center	104 Stampede Newcastle, WY 82701	Jane Rhoades	746-4560	746-9417
3	Tot Time Preschool	100 South Belle Fourche (PO Box 489) Moorcroft, WY 82721	Jane Rhoades	756-3554	N/A
3	Weston County Children's Center –Upton	629 Sheridan (PO Box 563) Upton, WY 82730	Jane Rhoades	468-2200	468-2227
4	The Learning Center	185 South Willow (PO Box 4180) Jackson, WY 83001	Judy Montagne	733-3791	733-9694
4	The Big Piney Learning Center	650 Annex, Piney Drive (PO Box 594) Big Piney, WY 83113	Judy Montagne	276-5415	276-3918
4	The Pinedale Learning Center	191 S. Franklin (PO Box 45) Pinedale, WY 82941	Judy Montagne	367-6306	367-6379
5	Bridger Valley Child Development Center	1001 Highway 414 North (PO Box 570) Mountain View, WY 82939	Shauna Lockwood	782-6601	782-7328
5	Kemmerer Child Development Center	1208 Elk Street Kemmerer, WY 83101	Shauna Lockwood	877-6984	877-9650
5	Afton Child Development Center	675 South Washington (PO Box 877) Afton, WY 83110	Shauna Lockwood	885-9286	885-9287
5	Star Valley Child Development Center	265 North Van Noy Parkway (PO Box 672) Thayne, WY 83127	Shauna Lockwood	883-4116	883-4418
5	LUCDA – Evanston	350 City View Drive, Suite 104 Evanston, WY 82930	Shauna Lockwood	789-7384	789-5525
5	Alpine Child Development Center	247 Snake River Drive Alpine, WY 83128	Shauna Lockwood	654-4116	N/A
6	Child Development Services of Fremont County	100 Pushroot Court (PO Box 593) Lander, WY 82520	Lori Morrow	332-5508	332-7972
6	Child Development Services of Fremont County (Part C)	202 South 6 <sup>th</sup> East Riverton, WY 82501	Lori Morrow	856-4246	N/A
6	Child Development Services of Fremont County	202 East Jackson (PO Box 593 Lander, WY) Riverton, WY 82501	Lori Morrow	856-4337	856-0851
6	Child Development Services of Fremont County	9 South 1 <sup>st</sup> (PO Box 593 Lander, WY) Dubois, WY 82513	Lori Morrow	455-3341	455-3341
6	Child Development Services of Fremont County	Shoshoni School (PO Box 593 Lander, WY) Shoshoni, WY 82649	Lori Morrow	876-2551	876-9325

7	Sweetwater County Child Development Center	4509 Foothill Boulevard (PO Box 87, 82902) Rock Springs, WY 82901	Ann Owens	352-6871	352-6603
7	Sweetwater County Child Development Center	25 Shoshone Avenue Green River, WY 82935	Ann Owen	872-3290	872-3293
8	Project Reach	1801 Edinburgh Rawlins, WY 82301	Morita Flynn Pat Rosacker	324-9656	324-9657
8	Excel Preschool	204 West Spring (PO Box 1481) Saratoga, WY 82831	Morita Flynn Joyce Evans	326-5839	362-5879
9	Child Development Services of Natrona County	2020 East 12 <sup>th</sup> Street Casper, WY 82601	John Starnes	235-5097	473-1440
10	Guernsey Early Childhood Center	371 South Kansas (PO Box 160) Guernsey, WY 82214	Clark Burden	836-2838	836-2098
10	Glenrock Child & Family Development Center	929 West Birch (PO Box 2019) Glenrock, WY 82637	Clark Burden	436-5357	436-5358
10	Lusk Early Childhood Center	801 South Maple (PO Box 1261) Lusk, WY 82225	Clark Burden	334-2252	334-0189
10	Wheatland Early Childhood Center	28 Rompoon Road (PO Box 243) Wheatland, WY 82201	Clark Burden	322-3385	322-5194
10	Torrington Learning Center	3110 West C Street Torrington, WY 82240	Clark Burden	532-7068	532-4641
10	Douglas Child & Family Development Center	630 Erwin Douglas, WY 82633	Clark Burden	358-3901	358-3955
11	Developmental Preschool & Daycare	715 Shield Street Laramie, WY 82072	Morita Flynn Karen Thorton	742-6374	721-5982
12	STRIDE Learning Center	326 Parsley Boulevard Cheyenne, WY 82007	Tricia Whynott	632-2991	632-6271
13	Children's Developmental Services of Campbell County	1801 South 4-J Road Gillette, WY 82718	Earlene Hastings	682-2392	682-8463
14	Early Intervention Program Shoshoni & Arapahoe Tribes Office	90 Ethete Rd. Bldg 2 (PO Box 610) Ft. Washakie, WY 82514	Sue Jezek	332-3516	332-9116
14	Fort Washakie Child Project	9 Shipton Lane (PO Box 610) Ft. Washakie, WY 82514	Sue Jezek	332-5678	332-9116
14	Arapahoe Child Project	455 Little Wind River Bottom Rd. Arapahoe, WY 82510 (PO Box 610 Ft. Washakie, WY 82514)	Sue Jezek	856-9333	856-2440

## Appendix E

### STATE OF WYOMING PUBLIC HEALTH NURSES

<b>City</b>	<b>Facility</b>	<b>Address</b>	<b>Telephone Number</b>	<b>Fax Number</b>
<b>AFTON</b>	Lincoln County Public Health	421 Jefferson Street, Suite 401	(307) 885-9598	(307) 885-0175
<b>BIG PINEY</b>	Sublette County Public Health	630 Piney Dr	(307) 276-3575	
<b>BUFFALO</b>	Johnson County Public Health	85 Klondike Drive	(307) 684-2564	(307) 684-0744
<b>CASPER</b>	Casper-Natrona County Health Department	475 South Spruce	(307) 235-9340	(307) 577-9774
<b>CHEYENNE</b>	City-County Health Department	100 Central Avenue	(307) 633-4000	(307) 633-4066
<b>CHEYENNE</b>	State Nursing Services	6101 Yellowstone, 4th floor, Suite 420	(307) 777-7275	(307) 777-7278
<b>CODY</b>	Park County Public Health	1002 Sheridan Avenue	(307) 527-8570	(307) 527-8575
<b>DOUGLAS</b>	Converse County Health Department	442 Center Street	(307) 358-2536	(307) 358-3941
<b>EVANSTON</b>	Uinta County Public Health	350 City View Drive, Suite 101	(307) 789-9203	(307) 789-6635
<b>GILLETTE</b>	Campbell County Health Department	2301 S. 4J Rd.	(307) 682-7275	(307) 682-0374
<b>GLENROCK</b>	Converse County Health Department	615 W. Deer	(307) 436-3474	
<b>GREEN RIVER</b>	Sweetwater County Public Health	550 Uinta, Suite E	(307) 872-6320	(307) 872-3210
<b>GREYBULL</b>	Big Horn County Public Health	417 South 2nd Street	(307) 765-2371	(307) 765-2381
<b>JACKSON</b>	Teton County Public Health	460 East Pearl Avenue	(307) 733-6401	(307) 733-8747
<b>KAYCEE</b>	Johnson County Public Health/Kaycee	268 Nolan Avenue	(307) 738-2404	
<b>KEMMERER</b>	Lincoln County Public Health	925 Sage, Suite 106	(307) 877-3780	(307) 828-3114
<b>LANDER</b>	Fremont County Public Health	450 North 2nd Street, Room 350	(307) 332-1073	(307) 332-1064
<b>LARAMIE</b>	Albany County Community Health	609 South 2nd Street	(307) 721-2561	(307) 721-2565
<b>LOVELL</b>	Big Horn County Public Health	757 Great Western	(307) 548-6591	(307) 548-6517
<b>LUSK</b>	Niobrara County Public Health	611 East 6th Street	(307) 334-2609	(307) 334-2619

<b>LYMAN</b>	Uinta County Public Health	128 East Owen Street	(307) 787-3800	(307) 787-3804
<b>NEWCASTLE</b>	Weston County Public Health	400 Stampede	(307) 746-3378	(307) 746-4775
<b>PINEDALE</b>	Sublette County Public Health	619 East Hennick	(307) 367-2157	(307) 367-2689
<b>POWELL</b>	Park County Public Health	109 West 14th Street	(307) 754-8870	(307) 754-8875
<b>RAWLINS</b>	Carbon County Public Health	Carbon Building, Room 136, 3rd Street & West Buffalo	(307) 328-2607	(307) 328-2602
<b>RIVERTON</b>	Fremont County Public Health	322 North 8th West, 2nd Floor	(307) 856-6979	(307) 856-6850
<b>ROCK SPRINGS</b>	Sweetwater County Public Health	731 C Street, Suite 315	(307) 922-5390	(307) 352-6844
<b>SARATOGA</b>	Carbon County Public Health	201 South River Street	(307) 326-5371	(307) 326-5735
<b>SHERIDAN</b>	Sheridan County Community Health Services	297 South Main Street	(307) 672-5169	(307) 672-5186
<b>SUNDANCE</b>	Crook County Public Health	420 1/2 East Main Street	(307) 283-1142	(307) 283-1143
<b>THERMOPOLIS</b>	Hot Springs County Public Health	117 North 4 <sup>th</sup> Street	(307) 864-3311	(307) 864-3453
<b>TORRINGTON</b>	Goshen County Public Health	2025 Campbell Drive, Suite 1	(307) 532-4069	(307) 532-4060
<b>WHEATLAND</b>	Platte County Public Health	718 9th Street	(307) 322-2540	(307) 322-2846
<b>WORLAND</b>	Washakie County Public Health	1007 Robertson Avenue	(307) 347-3278	(307) 347-3270

For the most current contact information, please refer to:  
<http://wdh.state.wy.us/familyhealth/nursing/offices.html>

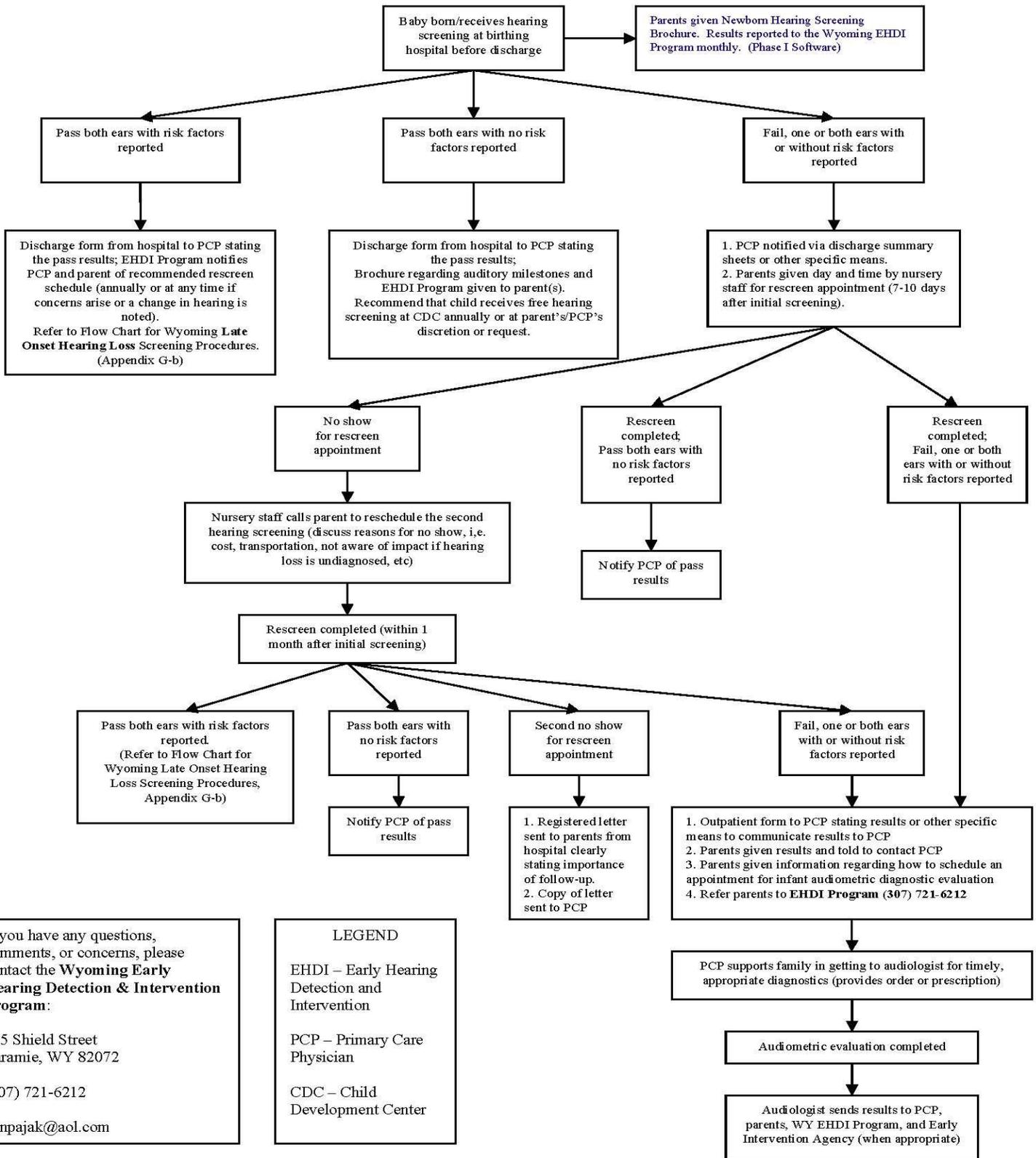
Appendix F

STATE OF WYOMING NEWBORN NURSERY MANAGERS

<p align="center"><b>Star Valley Medical Center</b></p> <p><b>Cari Hokanson</b> 307-885-5800 901 Adams Street Afton, WY 83101 Fax: 307-885-5879</p>	<p align="center"><b>Johnson County Healthcare Center</b></p> <p><b>Mary Whaley</b> 307-684-5521 497 West Lott Buffalo, WY 82834 Fax: 307-684-5385</p>
<p align="center"><b>Wyoming Medical Center</b></p> <p><b>Kristi Keller &amp; Kim Carlisle</b> 307-577-7201 1233 East 2<sup>nd</sup> Street Casper, WY 82601 Fax: 307-577-2695</p>	<p align="center"><b>Cheyenne Regional Medical Center</b></p> <p><b>Elva Carpenter &amp; Heidi Tatum</b> 307-634-2273 214 East 23<sup>rd</sup> Street Cheyenne, WY 82001 Fax: 307-633-7728</p>
<p align="center"><b>West Park Hospital</b></p> <p><b>Kasi Nelson</b> 307-527-7501 707 Sheridan Avenue Cody, WY 82414 Fax: 307-578-2719</p>	<p align="center"><b>Memorial Hospital of Converse County</b></p> <p><b>Beckie Oliver</b> 307-358-2122 111 South 5<sup>th</sup> Street Douglas, WY 82633 Fax: 307-358-7311</p>
<p align="center"><b>Evanston Regional Hospital</b></p> <p><b>Debbie Revelli</b> 307-789-3636 190 Arrowhead Drive Evanston, WY 82930 Fax: 307-783-8132</p>	<p align="center"><b>Campbell County Memorial Hospital</b></p> <p><b>Jill Blackman &amp; Lois Swain</b> 307-682-8811 501 South Burma Road Gillette, WY 82716 Fax: 307-687-2264</p>
<p align="center"><b>Saint John's Medical Center</b></p> <p><b>Patti Burr &amp; Joan Palmer</b> 307-733-3636 625 East Broadway Jackson, WY 83001 Fax: 307-739-7522</p>	<p align="center"><b>South Lincoln Medical Center</b></p> <p><b>Kathi Parks</b> 307-877-4401 711 Onyx Street Kemmerer, WY 83101 Fax: 307-877-2214</p>
<p align="center"><b>Lander Regional Hospital</b></p> <p><b>Ronda Mazurie</b> 307-332-4420 1320 Bishop Randall Drive Lander, WY 82520 Fax: 307-349-6419</p>	<p align="center"><b>Ivinson Memorial Hospital</b></p> <p><b>Elaine Volin</b> 307-742-2141 255 North 30<sup>th</sup> Street Laramie, WY 82072 Fax: 307-742-2150</p>

<p align="center"><b>Powell Valley Healthcare</b></p> <p><b>Denise Schuler</b>  307-754-2267  777 Avenue H  Powell, WY 82435  Fax: 307-754-3176</p>	<p align="center"><b>Memorial Hospital of Carbon County</b></p> <p><b>Suzette Enriquez &amp; Amanda Stokes</b>  307-324-2221  2221 West Elm Street  Rawlins, WY 82301  Fax: 307-324-8254</p>
<p align="center"><b>Riverton Memorial Hospital</b></p> <p><b>Kathy Laidlaw</b>  307-856-4161  2100 West Sunset Drive  Riverton, WY 82501  Fax: 307-857-3483</p>	<p align="center"><b>Memorial Hospital of Sweetwater County</b></p> <p><b>Kasey Cadena</b>  307-362-3711  1200 College Drive  Rock Springs, WY 82901  Fax: 307-352-8454</p>
<p align="center"><b>Sheridan Memorial Hospital</b></p> <p><b>Becky Smith</b>  307-672-1000  1401 West 5<sup>th</sup> Street  Sheridan, WY 82801  Fax: 307-671-1111</p>	<p align="center"><b>Hot Springs County Memorial Hospital</b></p> <p><b>Dusty Sheesley &amp; Linsey Smith</b>  307-864-3121  150 East Arapahoe  Thermopolis, WY 82443  Fax: 307-864-5053</p>
<p align="center"><b>Community Hospital</b></p> <p><b>Peggy Jolovich &amp; Vickie Hitt</b>  307-532-4181  2000 Campbell Drive  Torrington, WY 82240  Fax: 307-532-8706</p>	<p align="center"><b>Platte County Memorial Hospital</b></p> <p><b>Darla Patterson</b>  307-322-6401  201 14<sup>th</sup> Street  Wheatland, WY 82201  Fax: 307-322-1504</p>
<p align="center"><b>Washakie Medical Center</b></p> <p><b>Sue Howe</b>  307-347-3221  400 South 15<sup>th</sup> Street  Worland, WY 82401  Fax: 307-347-6911</p>	

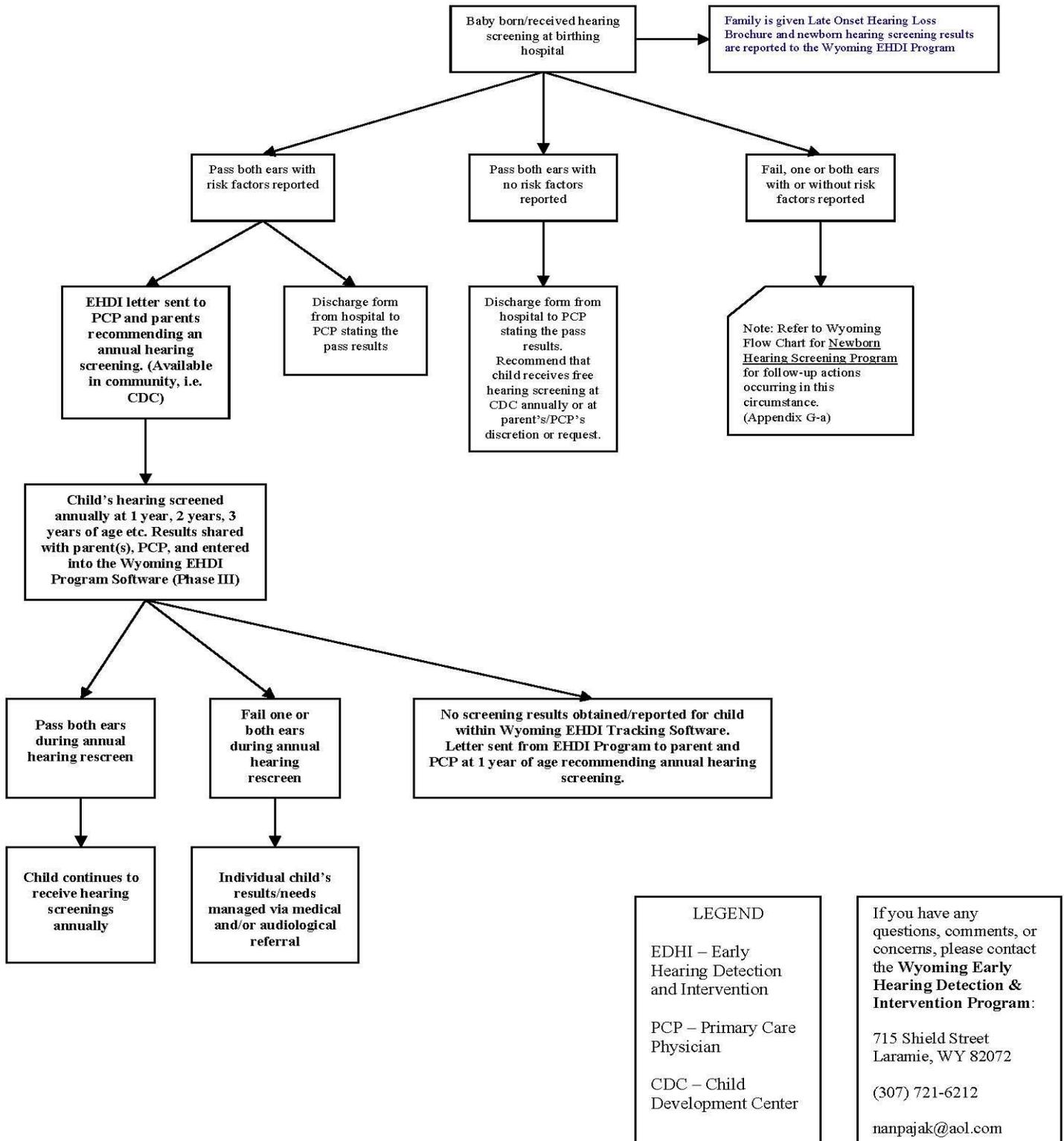
WYOMING EARLY HEARING DETECTION & INTERVENTION (EHDI) PROGRAM  
 FLOW CHART FOR **NEWBORN HEARING** SCREENING PROCEDURES



If you have any questions, comments, or concerns, please contact the Wyoming Early Hearing Detection & Intervention Program:  
 715 Shield Street  
 Laramie, WY 82072  
 (307) 721-6212  
 nanpajak@aol.com

**LEGEND**  
 EHDI – Early Hearing Detection and Intervention  
 PCP – Primary Care Physician  
 CDC – Child Development Center

WYOMING EARLY HEARING DETECTION & INTERVENTION (EHDI) PROGRAM  
 FLOW CHART FOR **LATE ONSET HEARING LOSS** SCREENING PROCEDURES



Appendix H

Wyoming Early Hearing Detection & Intervention Program (EHDI)  
Wyoming Department of Health • Behavioral Health Division • Early Intervention and Education  
Wyoming Department of Education • Outreach Services of Deaf/Hard of Hearing  
307-721-6212, 307-760-7931, or 307-777-6376

**Questions You May Want to Ask Your Child’s Audiologist**

Questions parents may wish to ask BEFORE making a hearing evaluation appointment for their infant or toddler:

- 1. What kind of training and experience does the audiologist have in conducting appropriate hearing evaluations for infants and toddlers?

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- 2. What age groups of children and how many children in these age groups has the audiologist worked with in the past year?

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- 3. What kind of training and experience does the audiologist have in fitting hearing aids for infants and toddlers?

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- 4. Do you have equipment needed to do:

- a. Click ABR \_\_\_\_\_
  - b. Tone Burst ABR \_\_\_\_\_
  - c. High Frequency Immittance with acoustic reflexes \_\_\_\_\_
  - d. Otoacoustic Emission (OAE) \_\_\_\_\_
  - e. Bone Conduction Click ABR \_\_\_\_\_
  - f. Visual Reinforcement (air conduction and bone conduction) to obtain ear specific information \_\_\_\_\_
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5. If my child needs to be sedated in order to complete the evaluation, is it available at your clinic?

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6. Will the audiologist who does the hearing evaluation provide me with a written report of the findings in a timely manner?

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Comments:

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Appointment Date: \_\_\_\_\_

Appointment Time: \_\_\_\_\_

Facility Name: \_\_\_\_\_

Facility Location: \_\_\_\_\_

Questions parents may wish to ask AFTER their child's hearing evaluation is complete:

1. Does my child have hearing loss?

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2. If yes, how much hearing loss does my child have? Please explain the terms: sensorineural, conductive, mixed, mild, moderate, severe, profound, auditory neuropathy.

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3. Is the hearing loss permanent?

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4. Does my child need more hearing testing done?

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5. Can you tell if my child's hearing loss will get worse or change?

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6. Do both ears have the same hearing loss?

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7. How will the hearing loss affect my child's speech and language development?

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8. Where can I get my child's speech and language development assessed?

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9. What could have caused my child's hearing loss?

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10. Can my child hear my voice without a hearing aid?

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11. Can my child hear my voice with a hearing aid?

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Questions about hearing aids and cochlear implants:

1. Does my child need a hearing aid? What are my choices?

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2. Should he/she have a hearing aid in both ears?

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3. How much do hearing aids cost?

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4. Can I get help to pay for the hearing aids?

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5. Can you help me contact a program that can lend me hearing aids?

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6. What will my child hear with the hearing aids?

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7. When should my child wear the hearing aids?

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8. How often will my child need new hearing aids or parts?

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9. What are the parts of a hearing aid that may need to be replaced?

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10. What should I do if my child does not want to wear the hearing aids?

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11. With my child's hearing loss, should I consider a cochlear implant?

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12. Where can I go for more information regarding cochlear implants?

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Other questions about hearing loss:

1. How do I describe the results of these hearing tests to family members?

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2. What are some tips for working with my child at home?

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3. Are there other resources you think I would benefit from knowing about?

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Other individuals working with my child and our family:

Name: \_\_\_\_\_

Phone Number: \_\_\_\_\_

## Appendix I

Wyoming Early Hearing Detection & Intervention Program (EHDI)  
Wyoming Department of Health • Behavioral Health Division • Early Intervention and Education  
Wyoming Department of Education • Outreach Services of Deaf/Hard of Hearing  
307-721-6212, 307-760-7931, or 307-777-6376

### **Questions You May Want to Ask Your Child's Speech-Language Pathologist:**

Name of Speech-Language Pathologist: \_\_\_\_\_

Phone: \_\_\_\_\_

Appointment Date: \_\_\_\_\_

Next Appointment Date: \_\_\_\_\_

<p>A speech-language pathologist (SLP), sometimes called a speech therapist, is a person who is trained to test and work with people with speech and language disorders.</p>
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If your child has a hearing loss, you will likely work with a speech-language pathologist (SLP). The SLP will help your family decide the best therapy approach for your child. The therapy approaches used with a child who does not hear sound differ from those used with a child who hears but has difficulty with speech and/or language. Some SLP's focus on spoken language only, while others focus on spoken language and sign language.

The SLP will work with your family and a team of professionals, such as an audiologist, an ear, nose, and throat doctor (ENT), an early intervention specialist, and a teacher of the deaf to provide you and your child with the services you need.

The SLP who has training and experience to test and work with infants and young children with hearing loss will offer the best care for your child.

**Questions About Speech and Language Therapy Services for my/our Child:**

1. What kind of training and experience do you have working with children who are deaf or hard of hearing? What age group of children have you worked with?

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2. What communication option(s) do you use in therapy (for example: Signing Exact English (SEE), American Sign Language (ASL), Cued Speech, Auditory-Verbal, etc.)? What is your experience and comfort level using these communication options?

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3. How will you test the progress of my child's speech and language development? How often will you test my child's progress? What test(s) will you use?

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4. How will I participate in my child's therapy sessions?

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5. How do you decide how much time my child will spend on speech production, language (spoken or signed), and auditory (hearing) training?

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6. What are my costs for the different types of therapies? What resources are available to help me with these costs?

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7. Can I observe a speech therapy session with another child who has hearing loss?

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**Questions to Help our Family and Child at Home/School:**

1. Can you tell me about other ways I can learn about the different types of communication options – books, videotapes, films, websites, and courses?

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2. What suggestions do you have for supporting my child’s use of communication at home (i.e., spoken and/or sign language)?

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3. How should I work with my child’s team of professionals (such as my child’s audiologist and school teachers) to ensure that all of our efforts are coordinated?

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4. What other resources do you offer? Can you suggest any other resources in the community for our family?

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Appendix J

Wyoming Early Hearing Detection & Intervention Program (EHDI)  
Wyoming Department of Health • Behavioral Health Division • Early Intervention and Education  
Wyoming Department of Education • Outreach Services of Deaf/Hard of Hearing  
307-721-6212, 307-760-7931, or 307-777-6376

**Questions You May Want to Ask Your Child’s  
Ear, Nose, & Throat (ENT) Doctor**

Name of Ear, Nose, and Throat Doctor: \_\_\_\_\_

Phone: \_\_\_\_\_

Appointment Date: \_\_\_\_\_

Next Appointment Date: \_\_\_\_\_

Test Name: \_\_\_\_\_

Name/Location of Test: \_\_\_\_\_

A pediatric ear, nose and throat (ENT) doctor is a specialist trained to diagnose and treat children with diseases and disorders of the ear, nose, or throat.

An ear, nose and throat (ENT) doctor (also called an otolaryngologist) can tell you if there is a medical condition in your child’s outer, middle, or inner ear that is causing the hearing loss by asking some questions and doing a medical examination. The doctor can also answer your questions about medical or surgical treatments. This will help ensure that intervention occurs within the “1-3-6” timeline (hearing screening before 1 month of age, hearing diagnostic audiological evaluation before 3 months of age, and early intervention before 6 months of age).

An ENT who has training and experience to evaluate and treat infants and young children will offer the best care for your baby.

**Questions about my child's hearing loss:**

1. Do you have experience in evaluating and treating babies and children with hearing loss?

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2. Do you have the most recent report from my child's audiologist (hearing specialist)?

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3. What type of hearing loss does my child have (Sensorineural, conductive, or mixed)? Please explain the terms.

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4. Should I make appointments with other health professionals? For example, an eye doctor or a geneticist?

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5. Would you suggest genetic counseling for our family?

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6. Are there other tests that my child needs? For example, brain scans (CT, MRI); heart tests (EKG); and blood or urine tests, or both. What will these tests tell you about my child's hearing loss?

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7. Can you tell if my child's hearing loss will change or get worse?

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8. Is there some cause for my child's hearing loss?

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9. How do I describe these results to family members?

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10. What treatments are available? For example, ear tubes, other surgery, or cochlear implants?

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11. Would my child benefit from a hearing aid? If so, how?

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12. Do I need a form signed by a health care professional to allow my child to be fitted with hearing aids?

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13. Is my child a candidate for a cochlear implant? Where can I go for more information?

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14. How often will we meet with you, onetime or ongoing?

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## Appendix K

Wyoming Early Hearing Detection & Intervention Program (EHDI)  
Wyoming Department of Health • Behavioral Health Division • Early Intervention and Education  
Wyoming Department of Education • Outreach Services of Deaf/Hard of Hearing  
307-721-6212, 307-760-7931, or 307-777-6376

### Questions You May Want to Ask Your Child's Medical Professional

Name of Medical Professional: \_\_\_\_\_

Phone/Contact Information: \_\_\_\_\_

Appointment Date: \_\_\_\_\_

Next Appointment Date: \_\_\_\_\_

Medical professionals are trained to diagnose and treat medical conditions in people. Examples include pediatricians, family physicians, primary care doctors, and nurse practitioners.

Your child's medical professional oversees your child's overall growth, health, and development. You might see your child's medical professional in an office, clinic, or hospital.

This person will coordinate all areas of your child's medical care. In addition to receiving routine care, a child with hearing loss may need to see specialists who will look at the child's specific health needs. These specialists may look at eyes, language or speech needs, genetics, or other areas. Your child's medical professional will help decide which specialists your child should see and when to see them. In this way, your child will receive coordinated care by all of his or her medical professionals.

#### **Your medical professional may send your child to some or all of the following specialists:**

- **Ophthalmologist:** A doctor who specializes in eyes.
- **Otolaryngologist:** A doctor who specializes in the ear, nose, and throat. This professional is often called an ear, nose and throat doctor or ENT.
- **Geneticist:** A professional who is trained to know about genes and the medical conditions (including hearing loss) that might be related to genetics.
- **Audiologist:** A professional trained to test hearing.
- **Speech-language pathologist:** A professional trained to know how children learn language and to teach children how to use speech and language.
- **Early intervention provider:** A person who is trained to provide services that support families and children, ages birth to 3 years, who have or are at risk for developmental delays.

If you have questions or concerns about the care your child needs, you may wish to schedule a longer appointment with your child’s medical professional. The questions that follow may help you better understand your child’s condition and the type of care he or she may receive.

**Questions about my/our child’s medical services:**

1. Do you know why my child has hearing loss? Could my child’s hearing loss be related to any other medical conditions? Could it be genetic?

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2. Are there specialists who are knowledgeable about childhood hearing loss that my child should see?

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3. How do I get the referrals for the specialists my child might need to see (e.g., speech, audiology, ENT, genetic, ophthalmology)? To get the referrals, do I need an appointment with you first or can I request them by calling your office?

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4. How will the specialists we see share their findings with you? How long does that process usually take? How am I (as parent/guardian) involved in the communication between the specialists, and will I get copies of the reports?

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5. Have you already received any reports about my child’s hearing loss (e.g., from audiology, ENT)?

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6. Will my child need more tests because of the hearing loss? For example, brain scans (CT, MRI) or blood or urine tests? What will these tests tell you about my child's hearing loss?

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7. If I have problems with the referrals, or if my insurance company has questions, what should I do? Can your office help me?

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8. Are there any medications that may have harmful effects on my child's hearing?

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9. Will ear infections or fluid in the ears affect my child's hearing loss? Should infections or fluid in the ears be treated differently because of my child's hearing loss?

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10. Will you need to see my child more often because of the hearing loss? How often?

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11. Other than my child's hearing loss, do you have other concerns about my child's development? Is he or she meeting the developmental milestones as he or she should?

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12. Can you tell me about early intervention services that are available in my area?

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13. Do you know of any community resources or support groups for my family?

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14. Is there anything more I should know or consider about my child's hearing loss or general health?

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## Appendix L

Wyoming Early Hearing Detection & Intervention Program (EHDI)  
Wyoming Department of Health • Behavioral Health Division • Early Intervention and Education  
Wyoming Department of Education • Outreach Services of Deaf/Hard of Hearing  
307-721-6212, 307-760-7931, or 307-777-6376

### Questions You May Want to Ask Your Child's Genetics Team

Names of Geneticist and Genetic Counselor: \_\_\_\_\_

Phone/Contact Information: \_\_\_\_\_

Appointment Date: \_\_\_\_\_

Next Appointment Date: \_\_\_\_\_

A “genetics team” is made up of a clinical geneticist, a genetic counselor, and other health care professionals. A clinical geneticist is a doctor who specializes in diagnosing and caring for people with genetic conditions. A genetic counselor is a health care professional who talks with people about the risk for genetic conditions and provides counseling and support. Members of the genetics team work together during a genetics exam.

The purpose of a genetics exam or genetic testing is to find out if the cause of your child's hearing loss is genetic. About half of all hearing loss in babies is genetic. This means that the hearing loss is caused by changes in genes. Genes contain the instructions that tell a person's cells how to grow and work. Sometimes a change in a gene can cause hearing loss. Hearing loss can also be caused by infections, premature birth, and other factors in the environment. For many children, the cause of hearing loss is not known.

Members of the genetics team will ask you questions and give your child a thorough physical exam to try to find the cause of your child's hearing loss. They may recommend that your child have a blood test. They may also ask that you have a blood test. They may suggest that your child see another doctor or specialist to help them better understand the cause of your child's hearing loss. Knowing the cause might help you and your child's doctors better understand your child's health care needs. It might also give you and your family information about the chance of having other children with hearing loss. Sometimes the cause of a child's hearing loss cannot be found, even if the child has a genetic evaluation.

The genetics team will work together to offer the best advice and care for you and your child.

1. Will a genetic exam and genetic testing tell me the cause of my child's hearing loss? What are some common genetic causes of hearing loss?

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2. Why should I try to find out the cause of my child's hearing loss? How can this information help my child?

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3. What will the results of genetic testing tell me? Does a negative test result mean that my child's hearing loss is not genetic?

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4. Can the results of genetic testing tell me if my child's hearing loss will get better or worse?

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5. How will genetic tests be done? What other kinds of tests might be done to find out the cause of my child's hearing loss?

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6. Will my child need to come back to your office after testing? If so, why?

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7. Why is it important to know if members of my family have had hearing loss and what type they had? How can hearing loss be inherited?

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8. If no one in my family has hearing loss, how can my child's hearing loss be genetic?

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9. Should my other children have genetic testing, too? Why?

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10. If I have another child, what is the chance that he or she will also have hearing loss?

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11. Should I share test results with other members of my family? Could other people in my family also have children with hearing loss?

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12. Where can I learn more about genetic testing for hearing loss? How can I meet other families who have children with hearing loss?

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## Appendix M

Wyoming Early Hearing Detection & Intervention Program (EHDI)  
Wyoming Department of Health • Behavioral Health Division • Early Intervention and Education  
Wyoming Department of Education • Outreach Services of Deaf/Hard of Hearing  
307-721-6212, 307-760-7931, or 307-777-6376

### **Questions You May Want to Ask Your Child's Early Interventionist**

Name of Early Interventionist: \_\_\_\_\_

Phone/Contact Information: \_\_\_\_\_

Appointment Date: \_\_\_\_\_

Next Appointment Date: \_\_\_\_\_

Early intervention is a program for children from birth to 3 years of age who have a developmental delay. Some states also provide services for children who are “at risk” for developmental delay. Children with hearing loss typically need early intervention services. An early interventionist, a specialist who works with infants and toddlers, will help identify your child’s needs and create an Individualized Family Service Plan (IFSP). This plan will be used to provide your child with the services he or she needs.

Early intervention services support families to help their children reach their full potential. These services are offered through public or private agencies. Your child may receive services at your home, a clinic, a daycare center, a hospital, or the local health department. States decide which children can receive services, but they follow rules under a federal law called “Part C” of the Individuals with Disabilities Education Improvement Act (IDEA). These services might be very helpful to your child.

Each state has an agency that serves infants and toddlers with hearing loss or other special needs. Once your child has been diagnosed with hearing loss, an early interventionist or someone with the state agency should call you. If you do not receive a call, or would like to know more about intervention services in your state, you can call the state office and ask to speak with the agency that serves children with special needs. The state number can be found in the blue colored pages of your local phone directory, under “State Government.”

It is important that children with hearing loss begin early intervention services as soon as possible. The goal for every child with hearing loss identified at birth is to start early intervention no later than 6 months of age or within 3 months of diagnosis. This will help the child develop communication and language skills that will last a lifetime.

**Questions about my/our child's early intervention services:**

1. What is early intervention? What can you do for my child? What services do you provide?

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2. Why is it so important for my child to start intervention this early?

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3. How much will early intervention services cost?

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4. How can my child learn to communicate? Can you tell me about sign language? Can you tell me about the different ways my child can learn to talk?

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5. How are hearing aids and cochlear implants different?

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6. How will I know if my child should get hearing aids or a cochlear implant?

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7. Does your program have staff trained to work with very young infants and toddlers with hearing loss, for all communication methods?

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8. Will you send progress reports for our child to his or her doctor and the state (or territorial) EHDI program?

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9. How much time will we spend in early intervention activities?

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10. Where will the intervention activities be provided?

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11. Where can I learn more about children with hearing loss? How can I meet other families who have young children with hearing loss?

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12. What will happen when my child is too old for your program?

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## Appendix N

### Wyoming Early Hearing Detection and Intervention (EHDI) Program

#### Pediatric Audiometric Diagnostic Guidelines

*All procedures refer to each ear individually; the numbers below represent the order in which the assessments are completed during testing.*

<u>Procedure</u>	<u>Expected information</u>
1) Pediatric case history	Screening information, significant medical history, family history of hearing loss, and any parental concerns.
2) Otoscopic evaluation	Observation of the outer ear and external ear canal as feasible.
3) Tympanometry	Information regarding middle ear status; high frequency probe tone should be used in children 6 months or younger. Include acoustic reflex testing.
4) Otoacoustic emissions (OAE)	Can assist in diagnosing normal or abnormal hearing sensitivity, middle ear status, or neural dysfunction.
5) Auditory brainstem response (ABR)	
a) Click-evoked ABR at 80 dBnHL	Evaluates neural integrity and function; absolute, interpeak (I-III-V), and interaural latencies along with waveform morphology to evaluate neural integrity; reversal of signal polarity to help identify site of pathology.
b) Click-evoked ABR threshold search	Estimated hearing sensitivity at 2-4 kHz.
c) Low and high frequency (tone burst) ABRs	Estimated hearing sensitivity at both low and high frequencies; information can assist in selecting and fitting a hearing aid when one is warranted.
6) Auditory steady state response (ASSR)	Provides further frequency-specific information; used to cross-check with the click-evoked and tone burst ABR results.

*If any of the above procedures indicate disorder, additional procedures that need to be completed are:*

<u>Additional procedures</u>	<u>Expected information</u>
1) Pediatric case history	More comprehensive than may have been done initially.
2) Bone-conduction ABR/ASSR	Establishes the type of hearing loss.

*When there is an indication of disorder, the follow-up procedures below need to be conducted at intervals recommended by the pediatric audiologist. The procedures below are appropriate for children who are 6-8 months of age or older and not exclusive to additional follow-up procedures and/or recommendations identified by the pediatric audiologist.*

**Follow-up procedures**

1) Visual reinforcement audiometry (VRA)  
air-conduction and bone-conduction  
thresholds or pure tone thresholds

2) Tympanometry

**Expected information**

Hearing thresholds to confirm the physiological findings above.

Evaluate middle ear status; low frequency probe tone may be used with children older than 6 months of age.

## Appendix O

### HISTORY OF EAR AND HEARING PROBLEMS

Children who have had many ear infections and periods of hearing loss are more likely to have language, vocabulary and listening difficulties when they start school. We would like to identify these children so that we are more aware of their possible hearing problems and can be alert for developing learning problems.

Parent or guardian, please answer the following questions:

Child's name \_\_\_\_\_

Date of Birth \_\_\_\_\_

Today's Date \_\_\_\_\_

- |  | <u>NO</u>                | <u>YES</u>               |
|--|--------------------------|--------------------------|
| 1. Did your child have <i>any</i> ear problems before the age of 2?  | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Has your child ever had a draining ear?   | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. To the best of your knowledge, approximately how many ear problems has your child had in his/her life?<br><input type="checkbox"/> 0-2 <input type="checkbox"/> 3-5 <input type="checkbox"/> 6-10 <input type="checkbox"/> 10 or more |                          |                          |
| 4. Does your child tend to have 4 or more ear problems each year?  | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Has your child had an ear problem in the last 6 months?   | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. Has your child had an ear problem that lasted 3 months or longer?<br>(with or without medication)   | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. Has your child ever had tubes placed in his/her eardrums?<br>If yes: How many times?_____ At what age(s)?_____  | <input type="checkbox"/> | <input type="checkbox"/> |

We welcome any comments about your child's ears or hearing.

EAR PROBLEM = ear infection, ear aches, draining ears, medicine taken for ears, doctor noticed fluid behind the eardrum, hole in eardrum, etc.

Appendix P  
SUGGESTIONS FOR SPEECH AND LANGUAGE DEVELOPMENT  
OF CHILDREN WITH MIDDLE EAR PROBLEMS

**THE IMPORTANCE OF TALKING**

Talking to your child is necessary for his/her language development. Since children usually imitate what they hear, how much you talk to your child, way you say, and how you say it will affect how much and how well your child talks.

**LOOK**

Look directly at your child's face and wait until you have his/her attention before you begin talking.

**CONTROL DISTANCE**

Be sure that you are close to your child when you talk (no further than 5 feet). The younger the child, the more importance it is to be close.

**LOUDNESS**

Talk slightly louder than you normally do. Turn off the radio, TV, dishwasher, etc to move background noise.

**BE A GOOD SPEECH MODEL**

- Describe to your child daily activities as they occur.
- Expand what your child says. For example, if your child points and says "car," you may say "Oh, you want the car."
- Add new information. You might add, "That car is little."
- Build vocabulary. Make teaching new words and concepts a natural part of every day's activities.
- Use new words while shopping, taking a walk, washing dishes, etc.
- Repeat your child's words using adult pronunciation.

**PLAY AND TALK**

Set aside some times throughout the day for "play time" for just you and your child. Play can be looking at books, exploring toys, singing songs, coloring, etc. Talk to your child during these activities, keeping the conversation at his/her level.

**READ**

Begin reading to your child at a young age (under 12 months). Ask a librarian for books that are right for your child's age. Reading can be a calming-down activity that promotes closeness between you and your child. Reading provides another opportunity to teach and review words and ideas. Some children enjoy looking at pictures in magazines and catalogs.

**DON'T WAIT**

Your child should have the following skills by the ages listed below:

- 18 months: 3 word vocabulary
- 2 years: 25-30 word vocabulary and several 2-word sentences
- 2 ½ years: At least a 50 word vocabulary and 2-word sentences consistently

**IF YOUR CHILD DOES NOT HAVE THESE SKILLS, TELL YOUR DOCTOR.** A referral to an audiologist and speech pathologist may be indicated. Hearing and language testing may lead to a better understanding of your child's language development.

Adapted from "Suggestions for Parents..." Noel Matkin, Ph.D., Professor of Audiology, University of Arizona, 1960.

A project of the Division of Developmental Disabilities – Department of Health – State of Wyoming

## Appendix Q

# Relationship of Hearing Loss to Listening and Learning Needs

Child's Name: \_\_\_\_\_

Date: \_\_\_\_\_

<b>16-25 dB HEARING LOSS</b>		
<b>Possible Impact on the Understanding of Language and Speech</b>	<b>Possible Social Impact</b>	<b>Potential Educational Accommodations and Services</b>
<ul style="list-style-type: none"> <li>• Impact of a hearing loss that is approximately 20 dB can be compared to ability to hear when index fingers are placed in your ears.</li> <li>• Child may have difficulty hearing faint or distant speech. At 16 dB student can miss up to 10% of speech signal when teacher is at a distance greater than 3 feet.</li> <li>• A 20 dB or greater hearing loss in the better ear can result in absent, inconsistent or distorted parts of speech, especially word endings (s, ed) and unemphasized sounds.</li> <li>• Percent of speech signal missed will be greater whenever there is background noise in the classroom, especially in the elementary grades when instruction is primarily verbal and younger children have greater difficulty listening in noise.</li> <li>• Young children have the tendency to watch and copy the movements of other students rather than attending to auditorily fragmented teacher directions.</li> </ul>	<ul style="list-style-type: none"> <li>• May be unaware of subtle conversational cues which could cause child to be viewed as inappropriate or awkward.</li> <li>• May miss portions of fast-paced peer interactions that could begin to have an impact on socialization and self concept.</li> <li>• Behavior may be confused for immaturity or inattention.</li> <li>• May be more fatigued due to extra effort needed for understanding speech.</li> </ul>	<ul style="list-style-type: none"> <li>• Noise in typical classroom environments impede child from having full access to teacher instruction. Will benefit from improved acoustic treatment of classroom and sound-field amplification.</li> <li>• Favorable seating necessary.</li> <li>• May often have difficulty with sound/letter associations and subtle auditory discrimination skills necessary for reading.</li> <li>• May need attention to vocabulary or speech, especially when there has been a long history of middle ear fluid.</li> <li>• Depending on loss configuration, may benefit from low power hearing aid with personal FM system.</li> <li>• Appropriate medical management necessary for conductive losses.</li> <li>• Inservice on impact of "minimal" 16 – 25 dB hearing loss on language development, listening in noise and learning, required for teacher.</li> </ul>

**Comments:**

**Please Consider Indicated Items in the Child's Educational Program:**

- |  |   |   |
|--|---|---|
| _____ Teacher inservice and seating close to teacher   | _____ Hearing monitoring at school every ____ mos.                        | _____ Amplification monitoring                |
| _____ Contact your school district's audiologist   | _____ Protect ears from noise to prevent more loss                        | _____ Educational support services/evaluation |
| _____ Screening/evaluation of speech and language  | _____ Note-taking, closed captioned films, visuals                        | _____ FM system trial period                  |
| _____ Educational consultation/ program supervision by specialist(s) in hearing loss                       | _____ Regular contact with other children who are deaf or hard of hearing |   |
| _____ Periodic educational monitoring such as October and April teacher/student completion of SIFTER, LIFE |   |   |

**NOTE: All children require full access to teacher instruction and educationally relevant peer communication to receive an appropriate education.**

Distance, noise in classroom and fragmentation caused by hearing loss prevent full access to spoken instruction. Appropriate acoustics, use of visuals, FM amplification, sign language, notetakers, communication partners, etc. increase access to instruction. Needs periodic hearing evaluation, rigorous amplification checks, and regular monitoring of access to instruction and classroom function (monitoring tools at [www.hear2learn.com](http://www.hear2learn.com) or [www.SIFTERanderson.com](http://www.SIFTERanderson.com)).

# Relationship of Hearing Loss to Listening and Learning Needs

Child's name: \_\_\_\_\_

Date: \_\_\_\_\_

<b>26-40 dB HEARING LOSS</b>		
<b>Possible Impact on the Understanding of Language and Speech</b>	<b>Possible Social Impact</b>	<b>Potential Educational Accommodations and Services</b>
<ul style="list-style-type: none"> <li>• Effect of a hearing loss of approximately 20 dB can be compared to ability to hear when index fingers are placed in ears.</li> <li>• A 26 – 40 dB hearing loss causes greater listening difficulties than a "plugged ear" loss.</li> <li>• Child can "hear" but misses fragments of speech leading to misunderstanding.</li> <li>• Degree of difficulty experienced in school will depend upon noise level in the classroom, distance from the teacher, and configuration of the hearing loss, even with hearing aids.</li> <li>• At 30 dB can miss 25-40% of the speech signal.</li> <li>• At 40 dB may miss 50% of class discussions, especially when voices are faint or speaker is not in line of vision.</li> <li>• Will miss unemphasized words and consonants, especially when a high frequency hearing loss is present.</li> <li>• Often experiences difficulty learning early reading skills such as letter/sound associations.</li> <li>• Child's ability to understand and succeed in the classroom will be substantially diminished by speaker distance and background noise, especially in the elementary grades.</li> </ul>	<ul style="list-style-type: none"> <li>• Barriers begin to build with negative impact on self-esteem as child is accused of "hearing when he/she wants to," "daydreaming," or "not paying attention."</li> <li>• May believe he/she is less capable due to difficulties understanding in class.</li> <li>• Child begins to lose ability for selective listening, and has increasing difficulty suppressing background noise causing the learning environment to be more stressful.</li> <li>• Child is more fatigued due to effort needed to listen.</li> </ul>	<ul style="list-style-type: none"> <li>• Noise in typical class will impede child from full access to teacher instruction.</li> <li>• Will benefit from hearing aid(s) and use of a desk top or ear level FM system in the classroom.</li> <li>• Needs favorable acoustics, seating and lighting.</li> <li>• May need attention to auditory skills, speech, language development, speechreading and/or support in reading and self-esteem.</li> <li>• Amount of attention needed typically related to the degree of success of intervention prior to 6 months of age to prevent language and early learning delays.</li> <li>• Teacher inservice on impact of a 26 – 40 dB hearing loss on listening and learning to convey that it is often greater than expected.</li> </ul>

**Comments:**

**Please Consider Indicated Items in the Child's Educational Program:**

- |  |   |   |
|--|---|---|
| _____ Teacher inservice and seating close to teacher   | _____ Hearing monitoring at school every ___ mos.                         | _____ Amplification monitoring                |
| _____ Contact your school district's audiologist   | _____ Protect ears from noise to prevent more loss                        | _____ Educational support services/evaluation |
| _____ Screening/evaluation of speech and language  | _____ Note-taking, closed captioned films, visuals                        | _____ FM system trial period                  |
| _____ Educational consultation/ program supervision by specialist(s) in hearing loss                       | _____ Regular contact with other children who are deaf or hard of hearing |   |
| _____ Periodic educational monitoring such as October and April teacher/student completion of SIFTER, LIFE |   |   |

**NOTE: All children require full access to teacher instruction and educationally relevant peer communication to receive an appropriate education.**

Distance, noise in classroom and fragmentation caused by hearing loss prevent full access to spoken instruction. Appropriate acoustics, use of visuals, FM amplification, sign language, notetakers, communication partners, etc. increase access to instruction. Needs periodic hearing evaluation, rigorous amplifier checks, and regular monitoring of access to instruction and classroom function (monitoring tools at [www.hear2learn.com](http://www.hear2learn.com) or [www.SIFTERanderson.com](http://www.SIFTERanderson.com)).

# Relationship of Hearing Loss to Listening and Learning Needs

Child's name:

Date:

## 41-55 dB HEARING LOSS

Possible Impact on the Understanding of Language and Speech	Possible Social Impact	Potential Educational Accommodations and Services
<ul style="list-style-type: none"> <li>• Consistent use of amplification and language intervention prior to age 6 months increases the probability that the child's speech, language and learning will develop at a normal rate.</li> <li>• Without amplification, child may understand conversation at a distance of 3-5 feet, if sentence structure and vocabulary are known.</li> <li>• The amount of speech signal missed can be 50% or more with 40 dB loss and 80% or more with 50 dB loss.</li> <li>• Without early amplification the child is likely to have delayed or disordered syntax, limited vocabulary, imperfect speech production and flat voice quality.</li> <li>• Addition of a visual communication system to supplement audition may be indicated, especially if language delays and/or additional disabilities are present.</li> <li>• Even with hearing aids, child can "hear" but may miss much of what is said if classroom is noisy or reverberant.</li> <li>• With personal hearing aids alone, ability to perceive speech and learn effectively in the classroom is at high risk.</li> <li>• A personal FM system to overcome classroom noise and distance is typically necessary.</li> </ul>	<ul style="list-style-type: none"> <li>• Barriers build with negative impact on self-esteem as child is accused of "hearing when he/she wants to," "daydreaming," or "not paying attention."</li> <li>• Communication will be significantly compromised with this degree of hearing loss, if hearing aids are not worn.</li> <li>• Socialization with peers can be difficult, especially in noisy settings such as cooperative learning situations, lunch or recess.</li> <li>• May be more fatigued than classmates due to effort needed to listen.</li> </ul>	<ul style="list-style-type: none"> <li>• Consistent use of amplification (hearing aids + FM) is essential.</li> <li>• Needs favorable classroom acoustics, seating and lighting.</li> <li>• Consultation/program supervision by a specialist in childhood hearing impairment to coordinate services is important.</li> <li>• Depending on early intervention success in preventing language delays, special academic support will be necessary if language and educational delays are present.</li> <li>• Attention to growth of oral communication, reading, written language skills, auditory skill development, speech therapy, self-esteem likely.</li> <li>• Teacher inservice required with attention to communication access and peer acceptance.</li> </ul>

### Comments:

#### Please Consider Indicated Items in the Child's Educational Program:

- |   |  |  |
|---|--|--|
| <input type="checkbox"/> Teacher inservice and seating close to teacher   | <input type="checkbox"/> Hearing monitoring at school every ___mos.                          | <input type="checkbox"/> Amplification monitoring                |
| <input type="checkbox"/> Contact your school district's audiologist   | <input type="checkbox"/> Protect ears from noise to prevent more loss                        | <input type="checkbox"/> Educational support services/evaluation |
| <input type="checkbox"/> Screening/evaluation of speech and language  | <input type="checkbox"/> Note-taking, closed captioned films, visuals                        | <input type="checkbox"/> FM system trial period                  |
| <input type="checkbox"/> Educational consultation/ program supervision by specialist(s) in hearing loss                       | <input type="checkbox"/> Regular contact with other children who are deaf or hard of hearing |  |
| <input type="checkbox"/> Periodic educational monitoring such as October and April teacher/student completion of SIFTER, LIFE |  |  |

**NOTE: All children require full access to teacher instruction and educationally relevant peer communication to receive an appropriate education.**

Distance, noise in classroom and fragmentation caused by hearing loss prevent full access to spoken instruction. Appropriate acoustics, use of visuals, FM amplification, sign language, notetakers, communication partners, etc. increase access to instruction. Needs periodic hearing evaluation, rigorous amplification checks, and regular monitoring of access to instruction and classroom function (monitoring tools at [www.hear2learn.com](http://www.hear2learn.com) or [www.SIFTERanderson.com](http://www.SIFTERanderson.com)).

© 1991, Relationship of Degree of Longterm Hearing Loss to Psychosocial Impact and Educational Needs, Karen Anderson & Noel Matkin, revised 2007 thanks to input from the Educational Audiology Association listserv.

# Relationship of Hearing Loss to Listening and Learning Needs

Child's name:

Date:

56-70 dB HEARING LOSS		
Possible Impact on the Understanding of Language and Speech	Possible Social Impact	Potential Educational Accommodations and Services
<ul style="list-style-type: none"> <li>• Even with hearing aids, child will typically be aware of people talking around him/her, but will miss parts of words said resulting in difficulty in situations requiring verbal communication (both one-to-one and in groups).</li> <li>• Without amplification, conversation must be very loud to be understood; a 55 dB loss can cause a child to miss up to 100% of speech information without functioning amplification.</li> <li>• If hearing loss is not identified before age one year and appropriately managed, delayed spoken language, syntax, reduced speech intelligibility and flat voice quality is likely.</li> <li>• Age when first amplified, consistency of hearing aid use and early language intervention strongly tied to success of speech, language and learning development.</li> <li>• Addition of visual communication system often indicated if language delays and/or additional disabilities are present.</li> <li>• Use of a personal FM system will reduce the effects of noise and distance and allow increased auditory access to verbal instruction.</li> <li>• With hearing aids alone, ability to understand in the classroom is greatly reduced by distance and noise.</li> </ul>	<ul style="list-style-type: none"> <li>• If hearing loss was late-identified and language delay was not prevented, communication interaction with peers will be significantly affected.</li> <li>• Children will have greater difficulty socializing, especially in noisy settings such as lunch, cooperative learning situations, or recess.</li> <li>• Tendency for poorer self-concept and social immaturity may contribute to a sense of rejection; peer inservice helpful.</li> </ul>	<ul style="list-style-type: none"> <li>• Full time, consistent use of amplification (hearing aids + FM system) is essential.</li> <li>• May benefit from frequency transposition (frequency compression) hearing aids depending upon loss configuration.</li> <li>• May require intense support in development of auditory, language, speech, reading and writing skills.</li> <li>• Consultation/supervision by a specialist in childhood hearing impairment to coordinate services is important.</li> <li>• Use of sign language or a visual communication system by children with substantial language delays or additional learning needs, may be useful to access linguistically complex instruction.</li> <li>• Note-taking, captioned films, etc. often are needed accommodations.</li> <li>• Teacher inservice required.</li> </ul>

**Comments:**

**Please Consider Indicated Items in the Child's Educational Program:**

- |   |  |  |
|---|--|--|
| <input type="checkbox"/> Teacher inservice and seating close to teacher   | <input type="checkbox"/> Hearing monitoring at school every ___mos.                          | <input type="checkbox"/> Amplification monitoring                |
| <input type="checkbox"/> Contact your school district's audiologist   | <input type="checkbox"/> Protect ears from noise to prevent more loss                        | <input type="checkbox"/> Educational support services/evaluation |
| <input type="checkbox"/> Screening/evaluation of speech and language  | <input type="checkbox"/> Note-taking, closed captioned films, visuals                        | <input type="checkbox"/> FM system trial period                  |
| <input type="checkbox"/> Educational consultation/ program supervision by specialist(s) in hearing loss                       | <input type="checkbox"/> Regular contact with other children who are deaf or hard of hearing |  |
| <input type="checkbox"/> Periodic educational monitoring such as October and April teacher/student completion of SIFTER, LIFE |  |  |

**NOTE: All children require full access to teacher instruction and educationally relevant peer communication to receive an appropriate education.**

Distance, noise in classroom and fragmentation caused by hearing loss prevent full access to spoken instruction. Appropriate acoustics, use of visuals, FM amplification, sign language, notetakers, communication partners, etc. increase access to instruction. Needs periodic hearing evaluation, rigorous amplification checks, and regular monitoring of access to instruction and classroom function (monitoring tools at [www.hear2learn.com](http://www.hear2learn.com) or [www.SIFTERanderson.com](http://www.SIFTERanderson.com)).

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# Relationship of Hearing Loss to Listening and Learning Needs

## 71-90 dB & 91+ dB HEARING LOSS

Possible Impact on the Understanding of Language and Speech	Possible Social Impact	Potential Educational Accommodations and Services
<ul style="list-style-type: none"> <li>• The earlier the child wears amplification consistently with concentrated efforts by parents and caregivers to provide rich language opportunities throughout everyday activities and/or provision of intensive language intervention (sign or verbal), the greater the probability that speech, language and learning will develop at a relatively normal rate.</li> <li>• Without amplification, children with 71-90 dB hearing loss may only hear loud noises about one foot from ear.</li> <li>• When amplified optimally, children with hearing ability of 90 dB or better should detect many sounds of speech if presented from close distance or via FM.</li> <li>• Individual ability and intensive intervention prior to 6 months of age will determine the degree that sounds detected will be discriminated and understood by the brain into meaningful input.</li> <li>• Even with hearing aids children with 71-90 dB loss are typically unable to perceive all high pitch speech sounds sufficiently to discriminate them, especially without the use of FM.</li> <li>• The child with hearing loss greater than 70 dB may be a candidate for cochlear implant(s) and the child with hearing loss greater than 90 dB will not be able to perceive most speech sounds with traditional hearing aids.</li> <li>• For full access to language to be available visually through sign language or cued speech, family members must be involved in child's communication mode from a very young age.</li> </ul>	<ul style="list-style-type: none"> <li>• Depending on success of intervention in infancy to address language development, the child's communication may be minimally or significantly affected.</li> <li>• Socialization with hearing peers may be difficult.</li> <li>• Children in general education classrooms may develop greater dependence on adults due to difficulty perceiving or comprehending oral communication.</li> <li>• Children may be more comfortable interacting with deaf or hard of hearing peers due to ease of communication.</li> <li>• Relationships with peers and adults who have hearing loss can make positive contributions toward the development of a healthy self-concept and a sense of cultural identity.</li> </ul>	<ul style="list-style-type: none"> <li>• There is no one communication system that is right for all hard of hearing or deaf children and their families.</li> <li>• Whether a visual communication approach or auditory/oral approach is used, extensive language intervention, full-time consistent amplification use and constant integration of the communication practices into the family by 6 months of age will highly increase the probability that the child will become a successful learner.</li> <li>• Children with late-identified hearing loss (i.e., after 6 months of age) will have delayed language.</li> <li>• This language gap is difficult to overcome and the educational program of a child with hearing loss, especially those with language and learning delays secondary to hearing loss, requires the involvement of a consultant or teacher with expertise in teaching children with hearing loss.</li> <li>• Depending on the configuration of the hearing loss and individual speech perception ability, frequency transposition aids (frequency compression) or cochlear implantation may be options for better access to speech.</li> <li>• If an auditory/oral approach is used, early training is needed on auditory skills, spoken language, concept development and speech.</li> <li>• If culturally deaf emphasis is selected, frequent exposure to Deaf, ASL users is important.</li> <li>• Educational placement with other signing deaf or hard of hearing students (special school or classes) may be a more appropriate option to access a language-rich environment and free-flowing communication.</li> <li>• Support services and continual appraisal of access to communication and verbal instruction is required.</li> <li>• Note-taking, captioning, captioned films and other visual enhancement strategies are necessary; training in pragmatic language use and communication repair strategies helpful.</li> <li>• Inservice of general education teachers is essential.</li> </ul>
<p><b>Comments:</b></p>		

**Please Consider Indicated Items in the Child's Educational Program:**

- |   |  |  |
|---|--|--|
| <input type="checkbox"/> Teacher inservice and seating close to teacher   | <input type="checkbox"/> Hearing monitoring at school every ___mos.                          | <input type="checkbox"/> Amplification monitoring                |
| <input type="checkbox"/> Contact your school district's audiologist   | <input type="checkbox"/> Protect ears from noise to prevent more loss                        | <input type="checkbox"/> Educational support services/evaluation |
| <input type="checkbox"/> Screening/evaluation of speech and language  | <input type="checkbox"/> Note-taking, closed captioned films, visuals                        | <input type="checkbox"/> FM system trial period                  |
| <input type="checkbox"/> Educational consultation/ program supervision by specialist(s) in hearing loss                       | <input type="checkbox"/> Regular contact with other children who are deaf or hard of hearing |  |
| <input type="checkbox"/> Periodic educational monitoring such as October and April teacher/student completion of SIFTER, LIFE |  |  |

**NOTE: All children require full access to teacher instruction and educationally relevant peer communication to receive an appropriate education.**

Distance, noise in classroom and fragmentation caused by hearing loss prevent full access to spoken instruction. Appropriate acoustics, use of visuals, FM amplification, sign language, notetakers, communication partners, etc. increase access to instruction. Needs periodic hearing evaluation, rigorous amplification checks, and regular monitoring of access to instruction and classroom function (monitoring tools at [www.hear2learn.com](http://www.hear2learn.com) or [www.SIFTERanderson.com](http://www.SIFTERanderson.com)).

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# Relationship of Hearing Loss to Listening and Learning Needs

Child's name: \_\_\_\_\_

Date: \_\_\_\_\_

## UNILATERAL HEARING LOSS

Possible Impact on the Understanding of Language and Speech	Possible Social Impact	Potential Educational Accommodations and Services
<ul style="list-style-type: none"> <li>• Child can "hear" but can have difficulty understanding in certain situations, such as hearing faint or distant speech, especially if poor ear is aimed toward the person speaking.</li> <li>• Will typically have difficulty localizing sounds and voices using hearing alone.</li> <li>• The unilateral listener will have greater difficulty understanding speech when environment is noisy and/or reverberant, especially when normal ear is towards the overhead projector or other competing sound source and poor hearing ear is towards the teacher.</li> <li>• Exhibits difficulty detecting or understanding soft speech from the side of the poor hearing ear, especially in a group discussion.</li> </ul>	<ul style="list-style-type: none"> <li>• Child may be accused of selective hearing due to discrepancies in speech understanding in quiet versus noise.</li> <li>• Social problems may arise as child experiences difficulty understanding in noisy cooperative learning, or recess situations.</li> <li>• May misconstrue peer conversations and feel rejected or ridiculed.</li> <li>• Child may be more fatigued in classroom due to greater effort needed to listen, if class is noisy or has poor acoustics.</li> <li>• May appear inattentive, distractible or frustrated, with behavior or social problems sometimes evident.</li> </ul>	<ul style="list-style-type: none"> <li>• Allow child to change seat locations to direct the normal hearing ear toward the primary speaker.</li> <li>• Student is at 10 times the risk for educational difficulties as children with 2 normal hearing ears and 1/3 to 1/2 of students with unilateral hearing loss experience significant learning problems.</li> <li>• Children often have difficulty learning sound/letter associations in typically noisy kindergarten and grade 1 settings.</li> <li>• Educational and audiological monitoring is warranted.</li> <li>• Teacher inservice is beneficial.</li> <li>• Typically will benefit from a personal FM system with low gain/power or a sound-field FM system in the classroom, especially in the lower grades.</li> <li>• Depending on the hearing loss, may benefit from a hearing aid in the impaired ear.</li> </ul>

### Comments:

#### Please Consider Indicated Items in the Child's Educational Program:

- Teacher inservice and seating close to teacher   
  Hearing monitoring at school every \_\_\_ mos.   
  Amplification monitoring  
 Contact your school district's audiologist   
  Protect ears from noise to prevent more loss   
  Educational support services/evaluation  
 Screening/evaluation of speech and language   
  Note-taking, closed captioned films, visuals   
  FM system trial period  
 Educational consultation/ program supervision by specialist(s) in hearing loss   
  Regular contact with other children who are deaf or hard of hearing  
 Periodic educational monitoring such as October and April teacher/student completion of SIFTER, LIFE

**NOTE: All children require full access to teacher instruction and educationally relevant peer communication to receive an appropriate education.**

Distance, noise in classroom and fragmentation caused by hearing loss prevent full access to spoken instruction. Appropriate acoustics, use of visuals, FM amplification, sign language, notetakers, communication partners, etc. increase access to instruction. Needs periodic hearing evaluation, rigorous amplification checks, and regular monitoring of access to instruction and classroom function (monitoring tools at [www.hear2learn.com](http://www.hear2learn.com) or [www.SIFTERanderson.com](http://www.SIFTERanderson.com)).

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# Relationship of Hearing Loss to Listening and Learning Needs

Child's name:

Date:

## MID-FREQUENCY HEARING LOSS or REVERSE SLOPE HEARING LOSS

### MID-FREQUENCY HEARING LOSS or REVERSE SLOPE

Possible Impact on the Understanding of Language and Speech	Possible Social Impact	Potential Educational Accommodations and Services
<ul style="list-style-type: none"> <li>• Child can "hear" whenever speech is present but will have difficulty understanding in certain situations.</li> <li>• May have difficulty understanding faint or distant speech, such as a student with a quiet voice speaking from across the classroom.</li> <li>• The "cookie bite" or reverse slope listener will have greater difficulty understanding speech when environment is noisy and/or reverberant, such as a typical classroom setting.</li> <li>• A 25 – 40 dB degree of loss in the low to mid-frequency range may cause the child to miss approximately 30% of speech information, if unamplified; some consonant and vowel sounds may be heard inconsistently, especially when background noise is present.</li> <li>• Speech production of these sounds may be affected.</li> </ul>	<ul style="list-style-type: none"> <li>• Child may be accused of selective hearing or "hearing when he wants to" due to discrepancies in speech understanding in quiet versus noise.</li> <li>• Social problems may arise as child experiences difficulty understanding in noisy cooperative learning situations, lunch or recess.</li> <li>• May misconstrue peer conversations, believing that other children are talking about him or her.</li> <li>• Child may be more fatigued in classroom setting due to greater effort needed to listen.</li> <li>• May appear inattentive, distractible or frustrated.</li> </ul>	<ul style="list-style-type: none"> <li>• Personal hearing aids important but must be precisely fit to hearing loss.</li> <li>• Child likely to benefit from a sound-field FM system, a personal FM system or assistive listening device in the classroom.</li> <li>• Student is at risk for educational difficulties.</li> <li>• Can experience some difficulty learning sound/letter associations in kindergarten and 1<sup>st</sup> grade classes.</li> <li>• Depending upon degree and configuration of loss, child may experience delayed language development and articulation problems.</li> <li>• Educational monitoring and teacher inservice warranted.</li> <li>• Annual hearing evaluation to monitor for hearing loss progression is important.</li> </ul>

### Comments:

#### Please Consider Indicated Items in the Child's Educational Program:

- |   |  |  |
|---|--|--|
| <input type="checkbox"/> Teacher inservice and seating close to teacher   | <input type="checkbox"/> Hearing monitoring at school every ___mos.                          | <input type="checkbox"/> Amplification monitoring                |
| <input type="checkbox"/> Contact your school district's audiologist   | <input type="checkbox"/> Protect ears from noise to prevent more loss                        | <input type="checkbox"/> Educational support services/evaluation |
| <input type="checkbox"/> Screening/evaluation of speech and language  | <input type="checkbox"/> Note-taking, closed captioned films, visuals                        | <input type="checkbox"/> FM system trial period                  |
| <input type="checkbox"/> Educational consultation/ program supervision by specialist(s) in hearing loss                       | <input type="checkbox"/> Regular contact with other children who are deaf or hard of hearing |  |
| <input type="checkbox"/> Periodic educational monitoring such as October and April teacher/student completion of SIFTER, LIFE |  |  |

**NOTE: All children require full access to teacher instruction and educationally relevant peer communication to receive an appropriate education.**

Distance, noise in classroom and fragmentation caused by hearing loss prevent full access to spoken instruction. Appropriate acoustics, use of visuals, FM amplification, sign language, notetakers, communication partners, etc. increase access to instruction. Needs periodic hearing evaluation, rigorous amplification checks, and regular monitoring of access to instruction and classroom function (monitoring tools at [www.hear2learn.com](http://www.hear2learn.com) or [www.SIFTERanderson.com](http://www.SIFTERanderson.com)).

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# Relationship of Hearing Loss to Listening and Learning Needs

Child's Name: \_\_\_\_\_

Date: \_\_\_\_\_

<b>HIGH FREQUENCY HEARING LOSS</b>		
<b>Possible Impact on the Understanding of Language and Speech</b>	<b>Possible Social Impact</b>	<b>Potential Educational Accommodations and Services</b>
<ul style="list-style-type: none"> <li>• Child can "hear" but can miss important fragments of speech.</li> <li>• Even a 26 – 40 dB loss in high frequency hearing may cause the child to miss 20%-30% of vital speech information if unamplified.</li> <li>• Consonant sounds t, s, f, th, k, sh, ch likely heard inconsistently, especially in the presence of noise.</li> <li>• May have difficulty understanding faint or distant speech, such as a student with a quiet voice speaking from across the classroom and will have much greater difficulty understanding speech when in low background noise and/or reverberation is present.</li> <li>• Many of the critical sounds for understanding speech are high pitched, quiet sounds, making them difficult to perceive; the words: cat, cap, calf, cast could be perceived as "ca," word endings, possessives, plurals and unstressed brief words are difficult to perceive and understand.</li> <li>• Speech production may be affected.</li> <li>• Use of amplification often indicated to learn language at a typical rate and ease learning.</li> </ul>	<ul style="list-style-type: none"> <li>• May be accused of selective hearing due to discrepancies in speech understanding in quiet versus noise.</li> <li>• Social problems may arise as child experiences difficulty understanding in noisy cooperative learning situations, lunch or recess.</li> <li>• May misinterpret peer conversations.</li> <li>• Child may be fatigued in classroom due to greater listening effort.</li> <li>• May appear inattentive, distractible or frustrated.</li> <li>• Could affect self concept.</li> </ul>	<ul style="list-style-type: none"> <li>• Student is at risk for educational difficulties.</li> <li>• Depending upon onset, degree and configuration of loss, child may experience delayed language and syntax development and articulation problems.</li> <li>• Possible difficulty learning some sound/letter associations in kindergarten and 1st grade classes.</li> <li>• Early evaluation of speech and language skills is suggested.</li> <li>• Educational monitoring and teacher inservice is warranted.</li> <li>• Will typically benefit from personal hearing aids and use of a sound-field or a personal FM system in the classroom.</li> <li>• Use of ear protection in noisy situations is imperative to prevent damage to inner ear structures and resulting progression of the hearing loss.</li> </ul>

**Comments:**

**Please Consider Indicated Items in the Child's Educational Program:**

- |   |  |  |
|---|--|--|
| ____ Teacher inservice and seating close to teacher   | ____ Hearing monitoring at school every ____ mos.                        | ____ Amplification monitoring                |
| ____ Contact your school district's audiologist   | ____ Protect ears from noise to prevent more loss                        | ____ Educational support services/evaluation |
| ____ Screening/evaluation of speech and language  | ____ Note-taking, closed captioned films, visuals                        | ____ FM system trial period                  |
| ____ Educational consultation/ program supervision by specialist(s) in hearing loss                       | ____ Regular contact with other children who are deaf or hard of hearing |  |
| ____ Periodic educational monitoring such as October and April teacher/student completion of SIFTER, LIFE |  |  |

**NOTE: All children require full access to teacher instruction and educationally relevant peer communication to receive an appropriate education.**

Distance, noise in classroom and fragmentation caused by hearing loss prevent full access to spoken instruction. Appropriate acoustics, use of visuals, FM amplification, sign language, notetakers, communication partners, etc. increase access to instruction. Needs periodic hearing evaluation, rigorous amplification checks, and regular monitoring of access to instruction and classroom function (monitoring tools at [www.hear2learn.com](http://www.hear2learn.com) or [www.SIFTERanderson.com](http://www.SIFTERanderson.com)).

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# Relationship of Hearing Loss to Listening and Learning Needs

Child's name:

Date:

<b>FLUCTUATING HEARING LOSS</b>		
<b>Possible Impact on the Understanding of Language and Speech</b>	<b>Possible Social Impact</b>	<b>Potential Educational Accommodations and Services</b>
<ul style="list-style-type: none"> <li>• Of greatest concern are children who have experienced hearing fluctuations over many months in early childhood (multiple episodes with fluid lasting three months or longer).</li> <li>• Listening with a hearing loss that is approximately 20 dB can be compared to hearing when index fingers are placed in ears.</li> <li>• This loss or worse is typical of listening with fluid or infection behind the eardrums.</li> <li>• Child can "hear" but misses fragments of what is said. Degree of difficulty experienced in school will depend upon the classroom noise level, the distance from the teacher and the current degree of hearing loss.</li> <li>• At 30 dB can miss 25-40% of the speech signal.</li> <li>• A child with a 40 dB loss associated with "glue ear" may miss 50% of class discussions, especially when voices are faint or speaker is not in line of vision.</li> <li>• Child with this degree of hearing loss will frequently miss unstressed words, consonants and word endings.</li> </ul>	<ul style="list-style-type: none"> <li>• Barriers begin to build with negative impact on self esteem as the child is accused of "hearing when he/she wants to," "daydreaming," or "not paying attention."</li> <li>• Child may believe he/she is less capable due to understanding difficulties in class.</li> <li>• Typically poor at identifying changes in own hearing ability. With inconsistent hearing, the child learns to "tune out" the speech signal.</li> <li>• Children are judged to have greater attention problems, insecurity, distractibility and lack self esteem.</li> <li>• Tend to be non-participative and distract themselves from classroom tasks; often socially immature.</li> </ul>	<ul style="list-style-type: none"> <li>• Impact is primarily on acquisition of early reading skills and attention in class.</li> <li>• Screening for language delays is suggested from a young age.</li> <li>• Ongoing monitoring for hearing loss in school, communication between parent and teacher about listening difficulties and aggressive medical management is needed.</li> <li>• Will benefit from sound-field FM or an assistive listening device in class.</li> <li>• May need attention to development of speech, reading, self esteem, or listening skills.</li> <li>• Teacher inservice is beneficial.</li> </ul>

**Comments:**

**Please Consider Indicated Items in the Child's Educational Program:**

- |   |  |  |
|---|--|--|
| <input type="checkbox"/> Teacher inservice and seating close to teacher   | <input type="checkbox"/> Hearing monitoring at school every ___ mos.                         | <input type="checkbox"/> Amplification monitoring                |
| <input type="checkbox"/> Contact your school district's audiologist   | <input type="checkbox"/> Protect ears from noise to prevent more loss                        | <input type="checkbox"/> Educational support services/evaluation |
| <input type="checkbox"/> Screening/evaluation of speech and language  | <input type="checkbox"/> Note-taking, closed captioned films, visuals                        | <input type="checkbox"/> FM system trial period                  |
| <input type="checkbox"/> Educational consultation/ program supervision by specialist(s) in hearing loss                       | <input type="checkbox"/> Regular contact with other children who are deaf or hard of hearing |  |
| <input type="checkbox"/> Periodic educational monitoring such as October and April teacher/student completion of SIFTER, LIFE |  |  |

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## Appendix R

### EFFECTS OF HEARING LOSS ON DEVELOPMENT

It is well recognized that hearing is critical to speech and language development, communication, and learning. Children with listening difficulties due to hearing loss or auditory processing problems continue to be an under-identified and underserved population.

The earlier hearing loss occurs in a child's life, the more serious the effects on the child's development. Similarly, the earlier the problem is identified and intervention begun, the less serious the ultimate impact.

There are four major ways in which hearing loss affects children—

1. It causes delay in the development of receptive and expressive communication skills (speech and language).
2. The language deficit causes learning problems that result in reduced academic achievement.
3. Communication difficulties often lead to social isolation and poor self-concept.
4. It may have an impact on vocational choices.

#### Specific Effects

##### Vocabulary

- Vocabulary develops more slowly in children who have hearing loss.
- Children with hearing loss learn concrete words like *cat*, *jump*, *five*, and *red* more easily than abstract words like *before*, *after*, *equal to*, and *jealous*. They also have difficulty with function words like *the*, *an*, *are*, and *a*.
- The gap between the vocabulary of children with normal hearing and those with hearing loss widens with age. Children with hearing loss do not catch up without intervention.
- Children with hearing loss have difficulty understanding words with multiple meanings. For example, the word *bank* can mean the edge of a stream or a place where we put money.

##### Sentence Structure

- Children with hearing loss comprehend and produce shorter and simpler sentences than children with normal hearing.
- Children with hearing loss often have difficulty understanding and writing complex sentences, such as those with relative clauses ("The teacher whom I have for math was sick today.") or passive voice ("The ball was thrown by Mary.")
- Children with hearing loss often cannot hear word endings such as *-s* or *-ed*. This leads to misunderstandings and misuse of verb tense, pluralization, nonagreement of subject and verb, and possessives.

## **Speaking**

- Children with hearing loss often cannot hear quiet speech sounds such as "s," "sh," "f," "t," and "k" and therefore do not include them in their speech. Thus, speech may be difficult to understand.
- Children with hearing loss may not hear their own voices when they speak. They may speak too loudly or not loud enough. They may have a speaking pitch that is too high. They may sound like they are mumbling because of poor stress, poor inflection, or poor rate of speaking.

## **Academic Achievement**

- Children with hearing loss have difficulty with all areas of academic achievement, especially reading and mathematical concepts.
- Children with mild to moderate hearing losses, on average, achieve one to four grade levels lower than their peers with normal hearing, unless appropriate management occurs.
- Children with severe to profound hearing loss usually achieve skills no higher than the third- or fourth-grade level, unless appropriate educational intervention occurs early.
- The gap in academic achievement between children with normal hearing and those with hearing loss usually widens as they progress through school.
- The level of achievement is related to parental involvement and the quantity, quality, and timing of the support services children receive.

## **Social Functioning**

- Children with severe to profound hearing losses often report feeling isolated, without friends, and unhappy in school, particularly when their socialization with other children with hearing loss is limited.
- These social problems appear to be more frequent in children with a mild or moderate hearing losses than in those with a severe to profound loss.

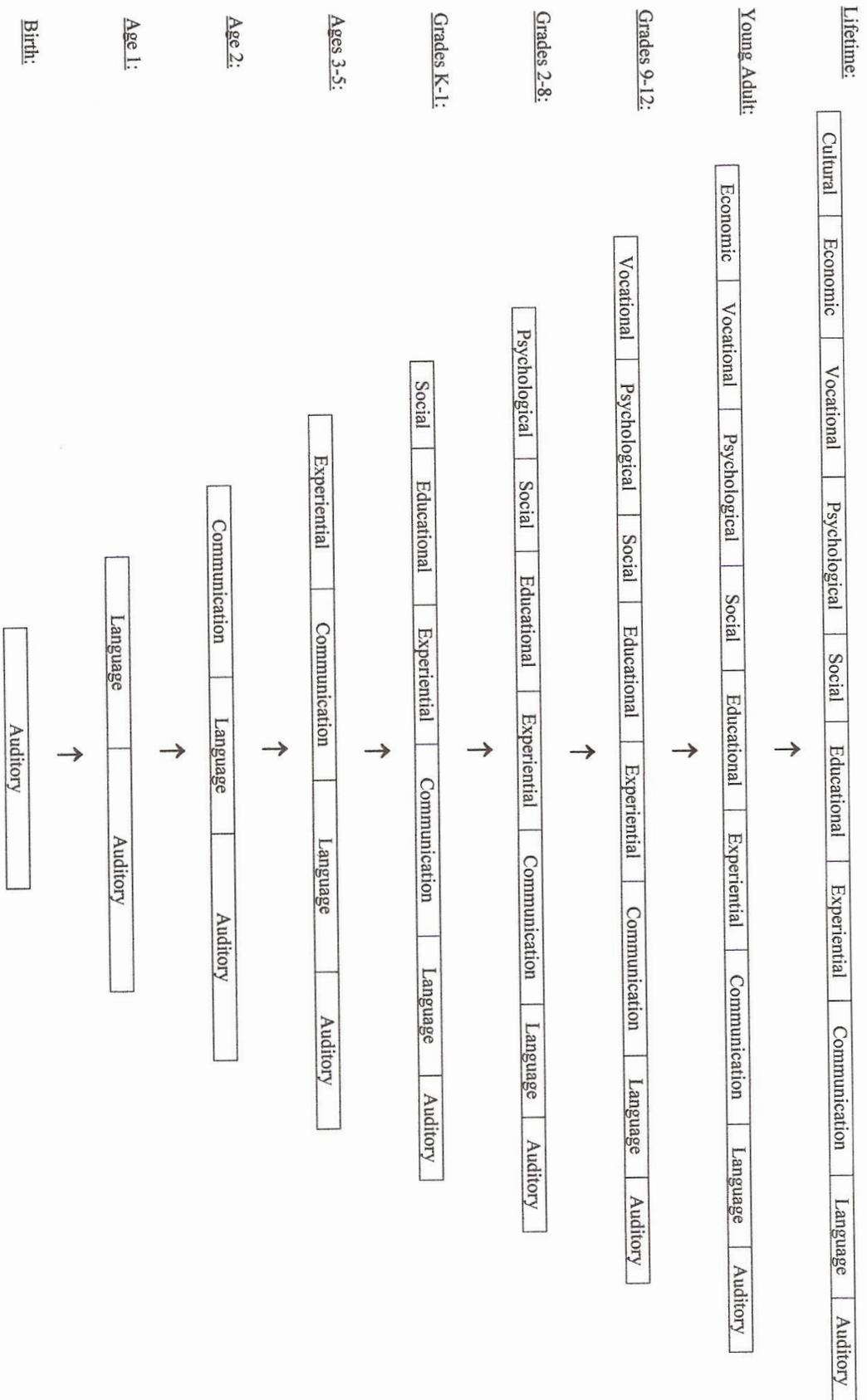
## **What You Can Do**

Recent research indicates that children identified with a hearing loss who begin services early may be able to develop language (spoken and/or signed) on a par with their hearing peers. If a hearing loss is detected in your child, early family-centered intervention is recommended to promote language (speech and/or signed depending on family choices) and cognitive development. An audiologist, as part of an interdisciplinary team of professionals, will evaluate your child and suggest the most appropriate audiologic intervention program.

To find an audiologist in your area, contact the American Speech-Language-Hearing Association (ASHA) by calling 800-638-8255 or use the [Find a Professional](#) service on ASHA's Web site ([www.asha.org](http://www.asha.org)).

## Appendix S

### PERVASIVE EFFECTS OF CHILDHOOD HEARING LOSS



## Appendix T

### AN EXAMPLE OF THE ABILITY OF THE BRAIN TO HEAR SPEECH WITH A HEARING LOSS

NORMAL HEARING	Freddie	thought	he	should	find	a	whistle.
MILD HEARING LOSS	Freddie	though-	-e	--ould	-ind	a	whi—e.
MODERATE HEARING LOSS	-reddie	--ough-	-e	--ould	-i--	a	--i—le.
SEVERE HEARING LOSS	--e—ie	--ou---	-e	--ou--	-i--	a	--i—le.
PROFOUND HEARING LOSS	LOUDsoft	LOUD	soft	soft	LOUD	soft	LOUDsoft.

## Appendix U

### HOW CAN I HELP MY BABY ADJUST TO WEARING HEARING AIDS? PRACTICAL TIPS

#### My child's hearing aids flop around. What can I do to prevent this?

One of the biggest problems parents often face is how to keep the hearing aids securely fitted to their child's ear. It is important to understand that no one solution will work for all children and it is often necessary for parents to explore a variety of options.

**Tone Hooks** – Tone hooks designed for adults are often too wide for infants and young children. Many manufacturers can provide a pediatric tone hook to improve the fit.



**Toupee Tape** – In some cases, it is helpful to use double-sided tape to secure the hearing aid to the skin behind the child's ear. This tape will need to be changed frequently. Some children may be allergic to or irritated by the adhesive.

**Eyeglass Band** – Sometimes it helps to secure the two hearing aids to each other with an elastic band that can help hold the hearing aids close to the ear.



**Huggie Aids™** – This device helps hold the hearing aid in place without adhesives, but does create more bulk around an infant's ear.

#### My child pulls his hearing aid out of his ear all of the time. What can I do?

Infants spend a majority of their waking hours exploring their environment and that environment includes their ears and hearing aids. It is important to first rule out that there are not other causes for your child's behavior, such as a poorly fitting earmold or hearing aid settings that are either too loud or not loud enough. Your pediatric audiologist can help determine if refection is due to physical discomfort or hearing aid concerns.

Some parents find it useful to have their child wear a cap or headband to minimize the likelihood of removal by their child. It is important to ensure that these devices do not affect the response of the hearing aid microphone.

#### I am constantly afraid that my child will lose her hearing aid at daycare or when we are at the store or at the park. Do you have any suggestions on how to prevent this?

Hearing aids are very expensive and parents often worry about losing such small devices. The following should be helpful:

**Loss and Damage Warranty** – Some manufacturers offer a renewable loss and damage warranty when hearing aids are purchased. If the manufacturer of your child's hearing aids does not offer this option, there are companies that do provide hearing aid insurance. It is important to read the details of these policies thoroughly. Some homeowner policies will also cover loss of hearing aids – ask your insurance agent.

Hearing Aid Clips – These colorful clips can be used to secure the hearing aid to the child’s clothing.



Dental Floss and Fishing Line – While not as attractive as the above option, dental floss or fishing line and a safety pin can provide the same security. It is important to make sure that the length of the string is kept short.

*My daughter’s hearing aid whistles all of the time. The only thing that prevents it is for me to turn the volume down below the recommended setting. What causes this and what should I do?*

Whistling or feedback is caused when sounds leak out of the ear and travels back into the hearing aid microphone. Turning down the volume of the hearing aid is not a good long-term solution, because important speech sounds will be less audible. The following options can be tried:



Comply™ Wrap

New Earmold – Unfortunately, frequent earmold replacement is often necessary for infants and young children because of rapid ear canal growth. This can be costly, but it is not uncommon for young children to need new earmolds as often as every 2 months in the first year of life and 2-3 times per year until they are preschool age. Earmolds made of a soft material provide a better seal and are safer for children than hard molds. Special pads called Comply™ Wraps may be used temporarily on the earmold to reduce feedback until a new mold can be made.

Foam Earmolds – One manufacturer, Hearing Components, provides a soft temporary earmold that can help prevent feedback. These are currently designed for adults and may be too big for many young children. However, they may provide a solution for some older children. (<http://www.hearingcomponents.com>)



Snap Tip™ Earmold

Remote Microphone – In special cases where feedback is very difficult to control, a remote microphone can be used if the hearing aid has a Direct Audio Input (DAI) option. Feedback can be reduced this way because the distance between the hearing aid microphone and hearing aid receiver (speaker) can be increased. The microphone can be clipped to the child’s hair or attached to a hat or bonnet.

Compliance Issues – Establishing hearing aid use can be a challenge for families, but it pays to be persistent. Some young children accept hearing aids easily while others may show resistance to wearing them. Just as some children refuse to wear a hat, gloves or shoes, they may not like having something in their ears. In some cases, a young infant may accept hearing aids at first, but reject them as she becomes older and more active. If your child begins to pull his hearing aids out repeatedly, one approach is to use the hearing aids during times when there is direct contact and communication between you and your child or during intervention times with the parent-infant specialist. This may be for short periods initially, but wearing times can be expanded over time. Both parent and child benefit when hearing aid use is part of the daily

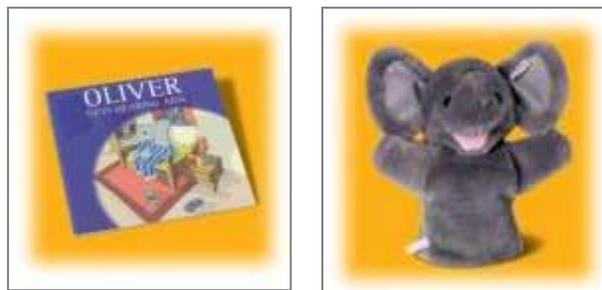
routine. Some parents have found that the use of caps, as mentioned above, allows for longer and more consistent wearing times. Eventually the cap will not be necessary as children learn to leave the hearing aids in place.

As some toddlers become more independent, hearing aid use can become a power struggle between parent and toddler. It is important for you as the parent to establish yourself as the authority about hearing aid use. Even if your toddler is pulling the hearing aid out regularly, you can put the hearing aid back in again and set a time limit for wearing it before Mommy or Daddy takes it out. This can be a difficult challenge for some families. Your parent-infant specialist can provide helpful suggestions for handling this issue with your child, so do not be afraid to share your concerns.

Older toddlers and preschoolers also may have color preferences for their earmolds and hearing aids. Engaging your child in selecting his or her preferred colors for both earmolds and hearing aids can improve their acceptance of wearing the devices and give them a sense of ownership. Many different earmold color combinations and patterns are now available from all earmold manufacturers. Children often try many different combinations of earmold colors over time: from solids to polka dots and from black to neon yellow! Colored hearing aid cases are available in a range of basic colors, and some manufacturers also make colorful stickers that can be used to decorate hearing aid cases.



Several hearing aid manufacturers have special books and kits for children. Information about hearing loss is presented at a child's level, which can help your child understand their hearing loss better. Child-friendly coloring books about hearing aids as well as care and maintenance kits for children can promote a sense of ownership and independence.



The following hearing aid manufacturers have books and accessories geared for children:

- The OtiKids Program from Oticon: <http://www.oticonus.com/OtiKids>
- The Oliver Program for Children from Phonak: <http://www.phonak-us.com/ccus/consumer/parents/oliver.htm>
- The Kids Klub Program from Unitron: <http://www.unitronhearing.us/ccus/people/childrenparents.htm>

Information provided by Boys town National Research Hospital: [www.babyhearing.org](http://www.babyhearing.org)

## Appendix V

### IMMITTANCE MEASUREMENTS INTERPRETATION PRACTICE

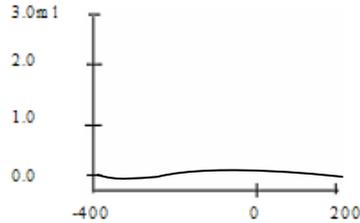
**Legend:**

ECV Ear Canal Volume	MEP Middle Ear Pressure	SC Tympanic Membrane Compliance (Static Compliance)
AR Acoustic Reflex	I Ipsilateral	NR No Response
DNT Did Not Test	NT No Test	NP No Peak
Y Yes, Present	N No, Not Present	N/A Not Applicable

#### 1. Child's Age: 8

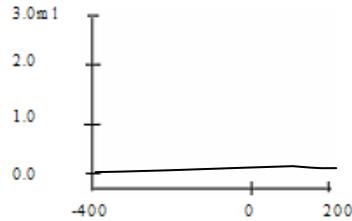
**Tymp: Sweep Right**

ECV: 0.60 ml  
 MEP: N/A daP  
 SC: N/A cm<sup>3</sup>  
 AR: Y (N) DNT



**Tymp: Sweep Left**

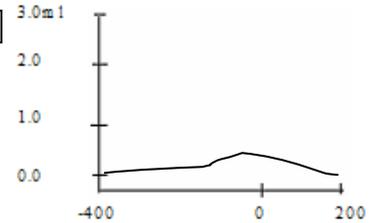
ECV: 0.57 ml  
 MEP: N/A daP  
 SC: N/A cm<sup>3</sup>  
 AR: Y (N) DNT



#### 2. Child's Age: 14

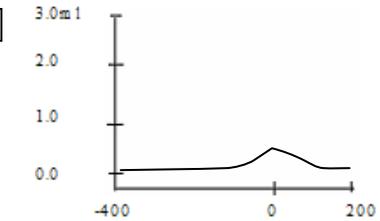
**Tymp: Sweep Right**

ECV: 0.79 ml  
 MEP: -15 daP  
 SC: 0.14 cm<sup>3</sup>  
 AR: Y (N) DNT



**Tymp: Sweep Left**

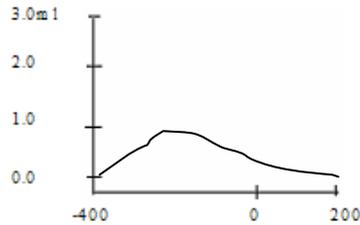
ECV: 0.66 ml  
 MEP: -10 daP  
 SC: 0.29 cm<sup>3</sup>  
 AR: Y (N) DNT



#### 3. Child's Age: 5

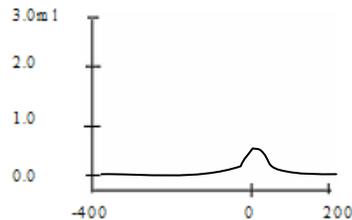
**Tymp: Sweep Right**

ECV: 0.70 ml  
 MEP: -260 daP  
 SC: 0.38 cm<sup>3</sup>  
 AR: Y (N) DNT



**Tymp: Sweep Left**

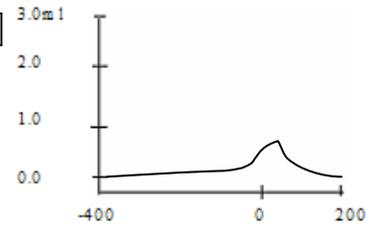
ECV: 0.74 ml  
 MEP: -45 daP  
 SC: 0.64 cm<sup>3</sup>  
 AR: Y (N) DNT



#### 4. Child's Age: 6

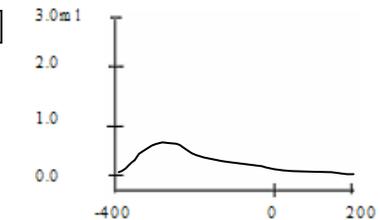
**Tymp: Sweep Right**

ECV: 0.59 ml  
 MEP: -5 daP  
 SC: 0.60 cm<sup>3</sup>  
 AR: Y (N) DNT



**Tymp: Sweep Left**

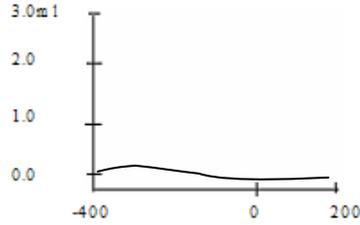
ECV: 0.60 ml  
 MEP: -155 daP  
 SC: 0.48 cm<sup>3</sup>  
 AR: Y (N) DNT



**5. Child's Age: 6**

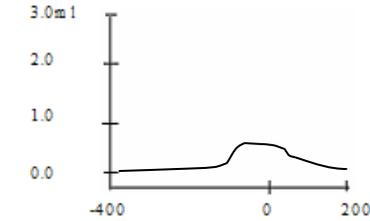
Tymp: Sweep Right

ECV: 0.58 ml  
MEP: N/A daP  
SC: N/A cm3  
AR: Y **N** DNT



Tymp: Sweep Left

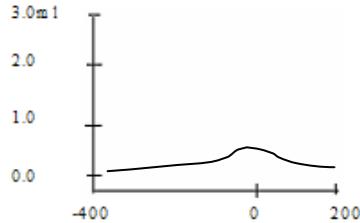
ECV: 0.60ml  
MEP: -60 daP  
SC: 0.40 cm3  
AR: Y **N** DNT



**7. Child's Age: 6**

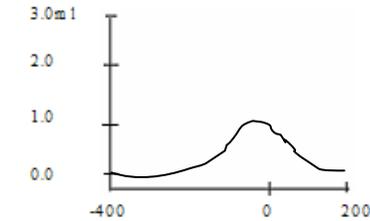
Tymp: Sweep Right

ECV: 0.53 ml  
MEP: -10 daP  
SC: 0.20 cm3  
AR: Y **N** DNT



Tymp: Sweep Left

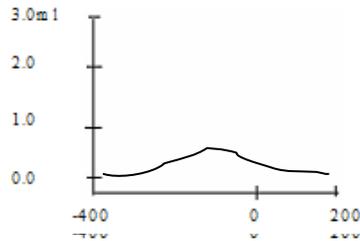
ECV: 0.70 ml  
MEP: -80 daP  
SC: 0.60 cm3  
AR: Y **N** DNT



**9. Child's Age: 8**

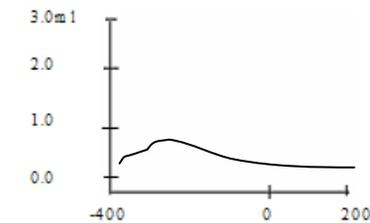
Tymp: Sweep Right

ECV: 0.87 ml  
MEP: -5 daP  
SC: 0.20 cm3  
AR: Y **N** DNT



Tymp: Sweep Left

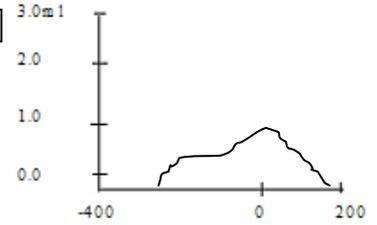
ECV: 0.93 ml  
MEP: N/A daP  
SC: N/A cm3  
AR: Y **N** DNT



**6. Child's Age: 8**

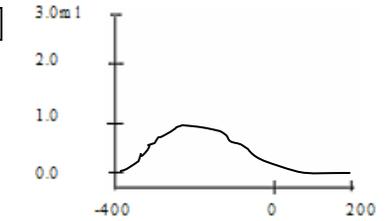
Tymp: Sweep Right

ECV: 0.75 ml  
MEP: -30 daP  
SC: 0.77 cm3  
AR: Y **N** DNT



Tymp: Sweep Left

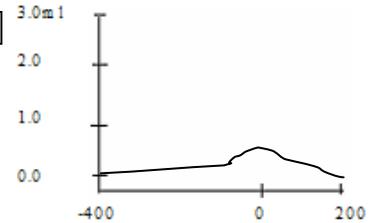
ECV: 0.77ml  
MEP: -195 daP  
SC: 0.76 cm3  
AR: Y **N** DNT



**8. Child's Age: 6**

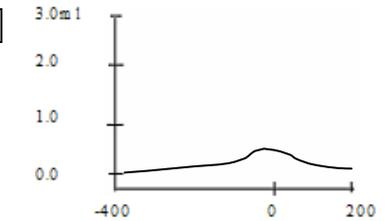
Tymp: Sweep Right

ECV: 0.49 ml  
MEP: -20 daP  
SC: 0.16 cm3  
AR: Y **N** DNT



Tymp: Sweep Left

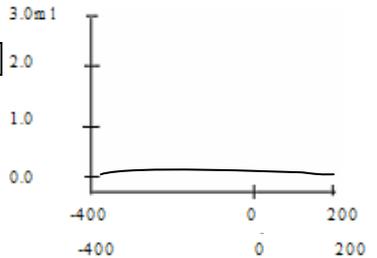
ECV: 0.54 ml  
MEP: -10 daP  
SC: 0.16 cm3  
AR: Y **N** DNT



**10. Child's Age: 11**

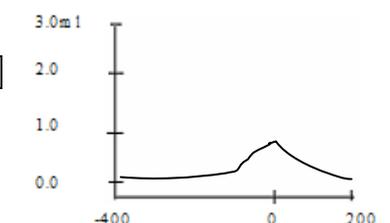
Tymp: Sweep Right

ECV: 0.38 ml  
MEP: N/A daP  
SC: N/A cm3  
AR: Y **N** DNT



Tymp: Sweep Left

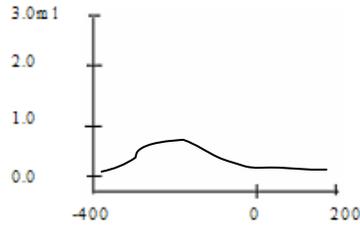
ECV: 1.02 ml  
MEP: -10 daP  
SC: 0.55 cm3  
AR: Y **N** DNT



**11. Child's Age: 13**

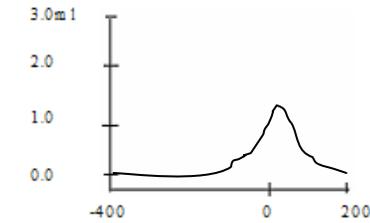
Tymp: Sweep Right

ECV: 0.93 ml  
MEP: -50 daP  
SC: 0.38 cm<sup>3</sup>  
AR:  Y  N DNT



Tymp: Sweep Left

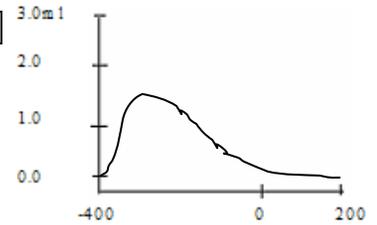
ECV: 0.85 ml  
MEP: -25 daP  
SC: 1.02 cm<sup>3</sup>  
AR:  Y  N DNT



**12. Child's Age: 5**

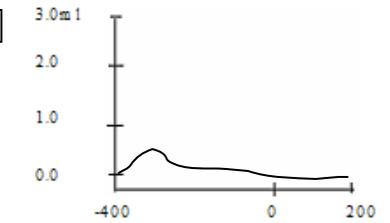
Tymp: Sweep Right

ECV: 0.76 ml  
MEP: -210 daP  
SC: 25 cm<sup>3</sup>  
AR:  Y  N DNT



Tymp: Sweep Left

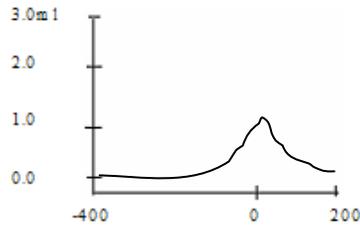
ECV: 0.81 ml  
MEP: N/A daP  
SC: N/A cm<sup>3</sup>  
AR:  Y  N DNT



**13. Child's Age: 6**

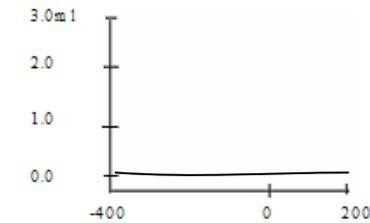
Tymp: Sweep Right

ECV: 0.56 ml  
MEP: 10 daP  
SC: 1.04 cm<sup>3</sup>  
AR:  Y  N DNT



Tymp: Sweep Left

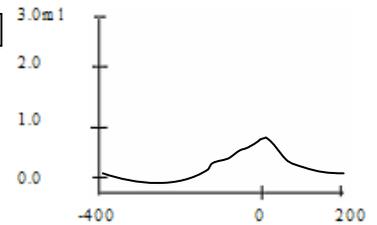
ECV: 4.61 ml  
MEP: N/A daP  
SC: N/A cm<sup>3</sup>  
AR:  Y  N DNT



**14. Child's Age: 14 Tubes visible, bilaterally**

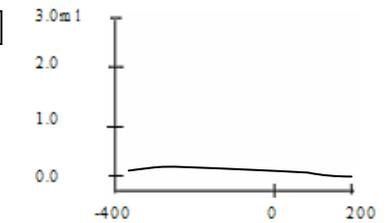
Tymp: Sweep Right

ECV: 0.66 ml  
MEP: -15 daP  
SC: 0.39 cm<sup>3</sup>  
AR:  Y  N DNT



Tymp: Sweep Left

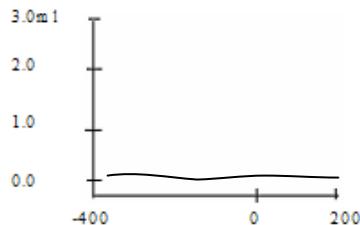
ECV: 2.59 ml  
MEP: N/A daP  
SC: N/A cm<sup>3</sup>  
AR:  Y  N DNT



**15. Child's Age: 7**

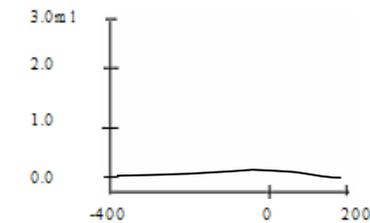
Tymp: Sweep Right

ECV: 0.64 ml  
MEP: N/A daP  
SC: N/A cm<sup>3</sup>  
AR:  Y  N DNT



Tymp: Sweep Left

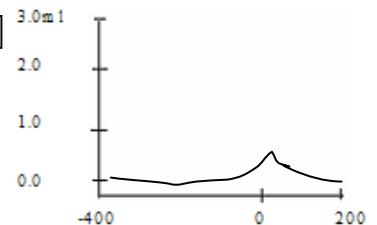
ECV: 0.56 ml  
MEP: N/A daP  
SC: N/A cm<sup>3</sup>  
AR:  Y  N DNT



**16. Child's Age: 9**

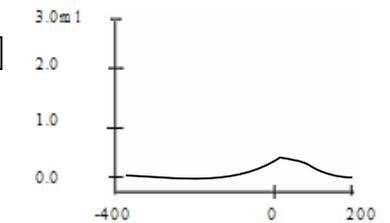
Tymp: Sweep Right

ECV: 0.57 ml  
MEP: 0 daP  
SC: 0.28 cm<sup>3</sup>  
AR:  Y  N DNT



Tymp: Sweep Left

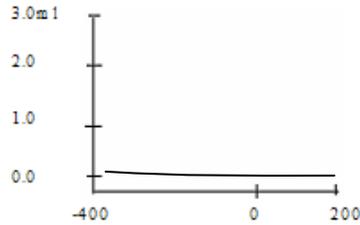
ECV: 0.74 ml  
MEP: 15 daP  
SC: 0.42 cm<sup>3</sup>  
AR:  Y  N DNT



**17. Child's Age: 7 Tubes visible, bilaterally**

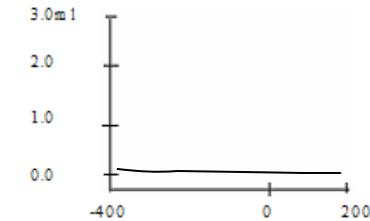
Tymp: Sweep Right

ECV: 0.64 ml  
MEP: N/A daP  
SC: N/A cm3  
AR: Y (N) DNT



Tymp: Sweep Left

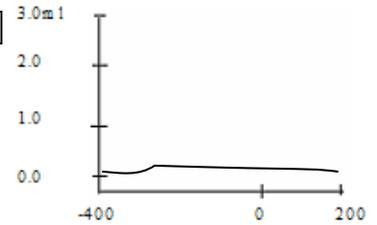
ECV: 3.90 ml  
MEP: N/A daP  
SC: N/A cm3  
AR: Y (N) DNT



**18. Child's Age: 6**

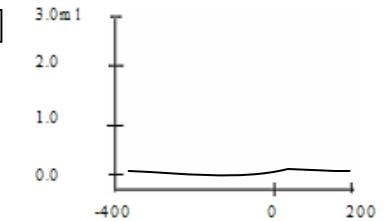
Tymp: Sweep Right

ECV: 0.64 ml  
MEP: N/A daP  
SC: N/A cm3  
AR: Y (N) DNT



Tymp: Sweep Left

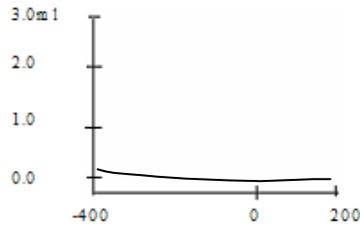
ECV: 3.90 ml  
MEP: N/A daP  
SC: N/A cm3  
AR: Y (N) DNT



**19. Child's Age: 10**

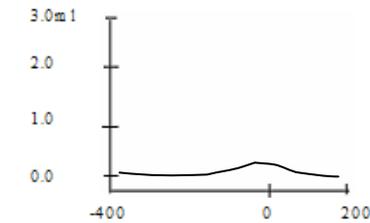
Tymp: Sweep Right

ECV: 6.0 ml  
MEP: N/A daP  
SC: N/A cm3  
AR: Y (N) DNT



Tymp: Sweep Left

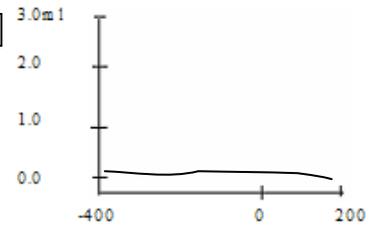
ECV: 0.56 ml  
MEP: -15 daP  
SC: 0.13 cm3  
AR: (Y) N DNT



**20. Child's Age: 5 Tubes visible, left ear**

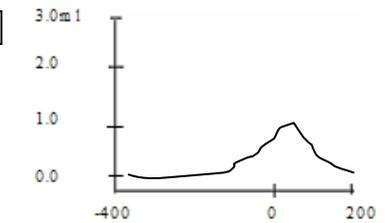
Tymp: Sweep Right

ECV: 3.19 ml  
MEP: N/A daP  
SC: N/A cm3  
AR: Y (N) DNT



Tymp: Sweep Left

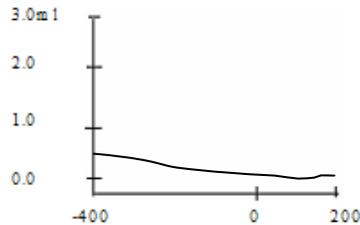
ECV: 0.77 ml  
MEP: 15 daP  
SC: 0.92 cm3  
AR: (Y) N DNT



**21. Child's Age: 6**

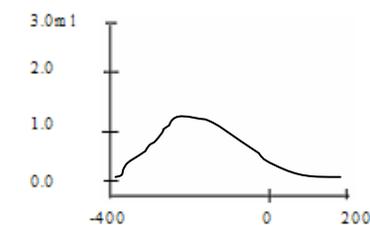
Tymp: Sweep Right

ECV: 0.76 ml  
MEP: N/A daP  
SC: N/A cm3  
AR: Y (N) DNT



Tymp: Sweep Left

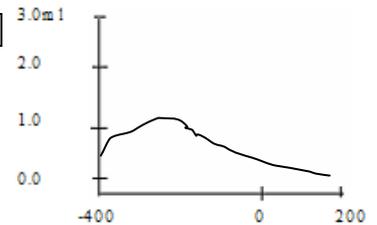
ECV: 0.74 ml  
MEP: -195 daP  
SC: 0.61 cm3  
AR: (Y) N DNT



**22. Child's Age: 5**

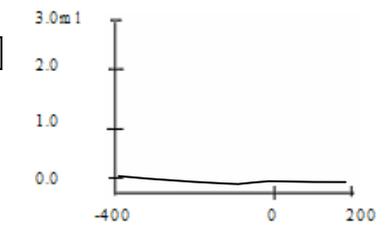
Tymp: Sweep Right

ECV: 0.72 ml  
MEP: -245 daP  
SC: 1.23 cm3  
AR: Y N (DNT)



Tymp: Sweep Left

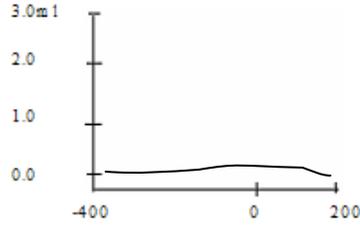
ECV: 0.79 ml  
MEP: N/A daP  
SC: N/A cm3  
AR: Y N (DNT)



**23. Child's Age: 16**

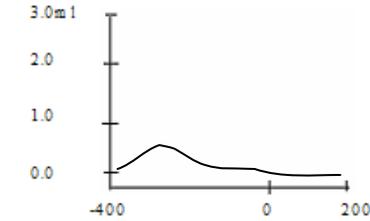
Tymp: Sweep Right

ECV: 1.12 ml  
 MEP: N/A daP  
 SC: N/A cm<sup>3</sup>  
 AR: Y N **(DNT)**



Tymp: Sweep Left

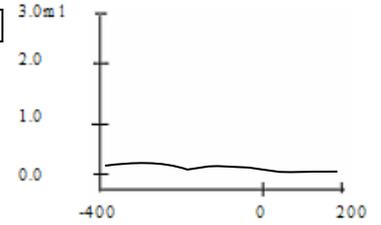
ECV: 1.06 ml  
 MEP: -245 daP  
 SC: 0.71 cm<sup>3</sup>  
 AR: Y N **(DNT)**



**24. Child's Age: 5**

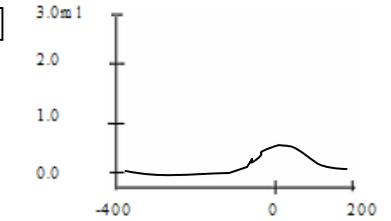
Tymp: Sweep Right

ECV: 0.62 ml  
 MEP: N/A daP  
 SC: N/A cm<sup>3</sup>  
 AR: Y **(N)** DNT



Tymp: Sweep Left

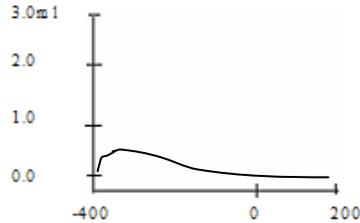
ECV: 0.77 ml  
 MEP: -55 daP  
 SC: 0.39 cm<sup>3</sup>  
 AR: Y N **(DNT)**



**25. Child's Age: 6**

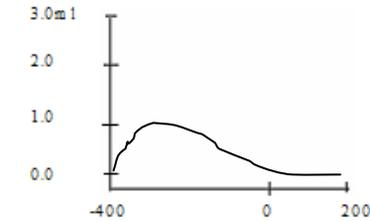
Tymp: Sweep Right

ECV: 0.64 ml  
 MEP: N/A daP  
 SC: N/A cm<sup>3</sup>  
 AR: Y **(N)** DNT



Tymp: Sweep Left

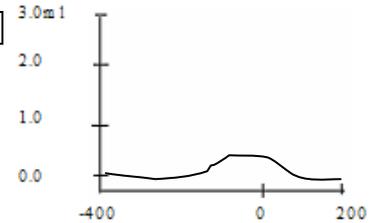
ECV: 0.70 ml  
 MEP: -230 daP  
 SC: 0.72 cm<sup>3</sup>  
 AR: Y **(N)** DNT



**26. Child's Age: 6**

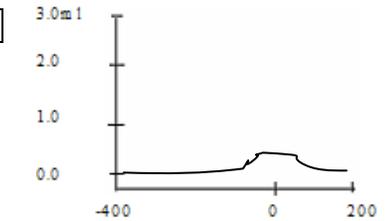
Tymp: Sweep Right

ECV: 0.48 ml  
 MEP: -35 daP  
 SC: 0.17 cm<sup>3</sup>  
 AR: **(Y)** N DNT



Tymp: Sweep Left

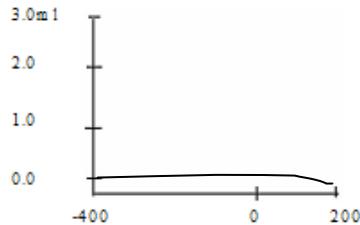
ECV: 0.49 ml  
 MEP: -45 daP  
 SC: 0.16 cm<sup>3</sup>  
 AR: **(Y)** N DNT



**27 (a). Child's Age: 8 (first screening)**

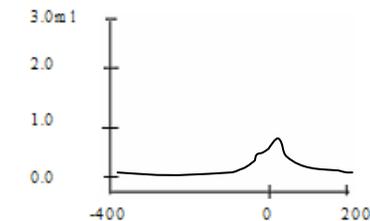
Tymp: Sweep Right

ECV: 1.46 ml  
 MEP: N/A daP  
 SC: N/A cm<sup>3</sup>  
 AR: Y **(N)** DNT



Tymp: Sweep Left

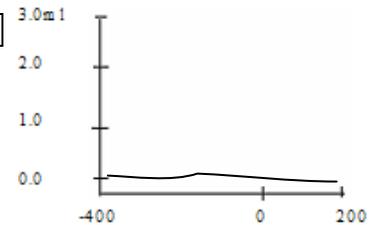
ECV: 0.61 ml  
 MEP: -5 daP  
 SC: 0.19 cm<sup>3</sup>  
 AR: **(Y)** N DNT



**27 (b). Child's Age: 8 (second screening, 2 weeks later)**

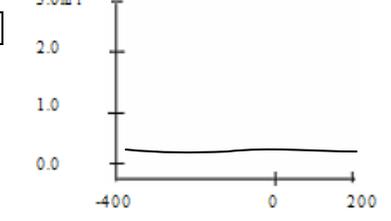
Tymp: Sweep Right

ECV: 0.50 ml  
 MEP: N/A daP  
 SC: N/A cm<sup>3</sup>  
 AR: Y **(N)** DNT



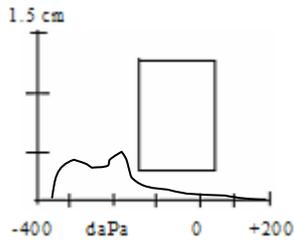
Tymp: Sweep Left

ECV: 0.57 ml  
 MEP: N/A daP  
 SC: N/A cm<sup>3</sup>  
 AR: Y **(N)** DNT



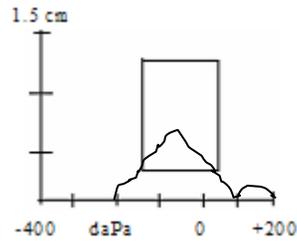
28.

ECV: 0.5 cm<sup>3</sup> PEAK: 0.3 cm<sup>3</sup> L  
MEP: -240 daPa I 1,000 Hz: NR

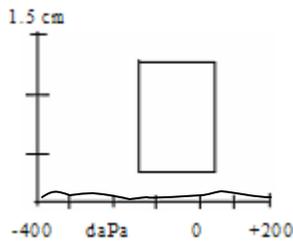


29. Tube visible right ear

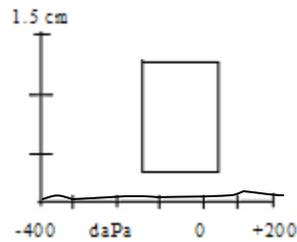
ECV: 0.7 cm<sup>3</sup> PEAK: 0.6 cm<sup>3</sup> L  
MEP: -35 daPa I 1,000 Hz @ 95dBHL



ECV: 0.4 cm<sup>3</sup> PEAK: NP cm<sup>3</sup> R  
MEP: NP daPa I 1,000 Hz: NT

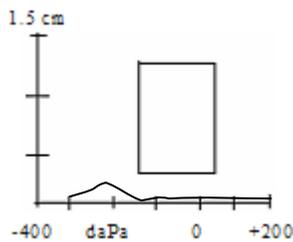


ECV: 2.0 cm<sup>3</sup> PEAK: NP cm<sup>3</sup> R  
MEP: NP daPa I 1,000 Hz: NR



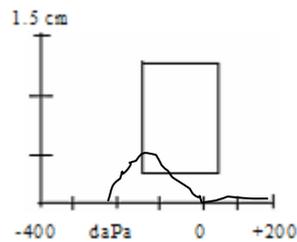
30.

ECV: 0.4 cm<sup>3</sup> PEAK: 0.2 cm<sup>3</sup> L  
MEP: -190 daPa I 1,000 Hz @ 105dBHL

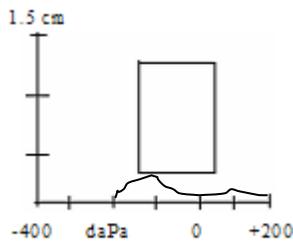


31.

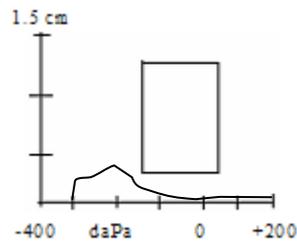
ECV: 0.6 cm<sup>3</sup> PEAK: 0.4 cm<sup>3</sup> L  
MEP: -105 daPa I 1,000 Hz: NT



ECV: 0.4 cm<sup>3</sup> PEAK: 0.2 cm<sup>3</sup> R  
MEP: -105 daPa I 1,000 Hz: NR



ECV: 0.6 cm<sup>3</sup> PEAK: 0.3 cm<sup>3</sup> R  
MEP: -260 daPa I 1,000 Hz @ 105 dBHL



## Appendix W

### IMMITTANCE MEASUREMENTS INTERPRETATION LEGEND (ANSWER KEY)

- |  |  |
|--|--|
| <p>1) Fail both ears<br/>Flat tympanogram<br/>Effusion possible<br/>Medical referral</p>   | <p>10) Fail “R”; Pass “L”<br/>Flat “R”<br/>Small volume “R”<br/>Wax impaction possible<br/>Medical Referral</p>                                |
| <p>2) Pass both ears<br/>R compliance is &lt; .2 but there is a peak and present AR</p>  | <p>11) Pass both ears<br/>Numbers okay<br/>Notch okay<br/>Back into screening schedule</p>   |
| <p>3) Fail “R”; Pass “L”<br/>Negative middle ear pressure<br/>Eustachian tube dysfunction<br/>Medical referral</p>                                 | <p>12) Pass “R”; Fail “L”<br/>Negative middle ear pressure “L” though not shown in numbers<br/>Medical referral</p>                            |
| <p>4) Pass both ears<br/>Numbers okay; though peak is rounded<br/>Back into screening schedule</p>   | <p>13) Pass “R”; Fail “L”<br/>Large volume<br/>Suspect perforation “L”<br/>Medical referral</p>  |
| <p>5) Fail “R”; Pass “L”<br/>Flat “R”<br/>Effusion possible<br/>Medical referral</p>   | <p>14) “R” tube out, middle ear pressure, and compliance<br/>WNL<br/>“L” tube in <u>or</u> out with perforation<br/>Results sent to doctor</p> |
| <p>6) Pass both ears<br/>Numbers okay though peak is rounded<br/>Back into screening schedule</p>  | <p>15) Fail both ears<br/>Both flat tympanograms<br/>Effusion possible<br/>Medical referral</p>  |
| <p>7) Pass both ears<br/>Numbers okay<br/>Back into screening schedule</p>   | <p>16) Pass both ears<br/>Numbers okay<br/>Back into screening schedule</p>  |
| <p>8) Pass both ears<br/>Numbers okay<br/>Back into screening schedule</p>   | <p>17) “R” tube plugged <u>or</u> out<br/>Effusion possible<br/>“L” tube open <u>or</u> out with perforation<br/>Results sent to doctor</p>    |
| <p>9) Pass “R”; Fail “L”<br/>Negative middle ear pressure “L” though not shown in numbers<br/>Eustachian tube dysfunction<br/>Medical referral</p> |  |

- 18) Fail both ears  
 “R” flat; “L” large volume  
 Effusion possible “R”  
 Perforation possible “L”  
 Medical referral
- 19) Fail “R”; Pass “L”  
 Large volume “R”  
 Perforation possible  
 “L” compliance is < .2 but there is a  
 peak and present AR  
 Medical referral
- 20) Fail “R”; Pass “L”  
 Large volume “R”  
 Perforation “R”  
 “L” tube out but middle ear  
 pressure and compliance  
 WNL  
 Medical referral
- 21) Fail “R”; Pass “L”  
 “R” no compliance or middle ear  
 pressure readings  
 Medical referral
- 22) Pass “R”; Fail “L”  
 No compliance value “L”  
 Effusion possible  
 Medical referral
- 23) Pass “L”; Fail “R”  
 “R” no compliance or middle ear  
 pressure recordable  
 Medical referral
- 24) Fail “R”; Pass “L”  
 Flat tympanogram “R”  
 Medical referral
- 25) Fail “R”; Pass “L”  
 No middle ear pressure or  
 compliance value “R”  
 Eustachian tube dysfunction  
 Possible effusion  
 Medical referral
- 26) Pass both ears  
 Compliance is < .2 but there is a  
 peak and present AR  
 Back into screening schedule
- 27) a. Fail “R”; Pass “L”  
 “R” flat; large volume  
 Suspect perforation “R”  
 b. Fail both ears  
 Flat tympanogram  
 Effusion possible  
 Medical referral
- 28) Fail “R”; Pass “L”  
 “R” flat tympanogram  
 Effusion possible  
 Medical referral
- 29) Pass “R”; Fail “L”  
 “R” large volume  
 Possible patent tube or tube out  
 with perforation  
 Results to doctor  
 Monitor tube function in 3 months
- 30) Pass both ears  
 Back into screening schedule
- 31) Fail “R”; Pass “L”  
 “R” negative middle ear pressure  
 Medical referral

Appendix X

REFERRAL CHART PRACTICE SCENARIOS

1. Four year old student with a family history of hearing loss.

Passed PT screening.

Imm R: -205 MEP  
.20 comp.  
1.0 PV

Imm L: -185 MEP  
.48 comp.  
1.1 PV

Notes:

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2. 8<sup>th</sup> grade student; tubes visisble.

Failed 4000 Hz, right ear.

Imm R: -40 MEP  
.57 comp.  
1.3PV

Imm L: ? MEP  
.10 comp.  
2.8 PV

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3. Three year old child; slow to respond to PT; not very consistent.

Imm R: ? MEP  
---- comp.  
.7 PV

Imm L: ? MEP  
---- comp.  
.2 PV

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4. 5<sup>th</sup> grade student new to district. No records available.

Fails 1000, 2000 and 4000 Hz in both ears.

Imm R: -40 MEP  
.88 comp.  
1.1 PV

Imm L: -180 MEP  
.30 comp.  
1.2 PV

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5. 3 1/2 year old child with developmental delays.

Tubes visible "L" ear. Passed OAEs.

Failed 1000 Hz, left ear.

Imm R: -100 MEP  
.48 comp.  
.8 PV

Imm L: ? MEP  
----- comp.  
1.7 PV

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6. 18 month old child with large café au lait spot covering right leg and torso. Passed OAEs and Immittance.

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7. 8 year old student. Otoscope inspection okay. Passed PTs, both ears.

Imm R: -300 MEP  
----- comp.  
PV

Imm L: -180 MEP  
.22 comp.  
1.2 PV

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8. 3<sup>rd</sup> grade student. Passed screening in K, 1<sup>st</sup>, and 2<sup>nd</sup> grades.

Passed 1000, 2000 and 4000 Hz, right ear.

Passed Immittance, both ears.

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9. 8<sup>th</sup> grade student with an IEP. Passed PTs.

Imm R: ? MEP  
.10 comp.  
1.3 PV

Imm L: ? MEP  
.19 comp.  
1.2 PV

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10. 1 year old.

Passed OAEs, right ear.

Refer OAEs, left ear.

Imm R: ? MEP  
N/A comp.  
6.7 PV

Imm L: ? MEP  
N/A comp.  
2.4 PV

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## Appendix Y (a)

# PRESCHOOL S.I.F.T.E.R.

## Screening Instrument for Targeting Educational Risk in Preschool Children (age 3-Kindergarten)

*by Karen L. Anderson, Ed.S. & Noel Matkin, Ph.D.*

Child \_\_\_\_\_ Teacher \_\_\_\_\_ Age \_\_\_\_\_

Date Completed \_\_\_/\_\_\_/\_\_\_ School \_\_\_\_\_ District \_\_\_\_\_

The above child is suspect for hearing problems which may affect his/her ability to listen, pay attention, develop language, follow teacher instruction and learn normally. This rating scale has been designed to sift out children who are at risk for educational delay and who may need further evaluation. Based on your knowledge of this child, circle the number that best represents his/her behavior. If the child is a member of a class that has students with special needs, comparisons should be made to normal learning classmates or normal developmental milestones. Please share additional comments about the child on the reverse side of this form.

1. How well does the child understand basic concepts when compared to classmates (e.g., colors, shapes, etc.)?	ABOVE 5	AVERAGE 4 3 2 1	BELOW 1	PRE-ACADEMICS	
2. How often is the child able to follow two-part directions?	ALWAYS 5	FREQUENTLY 4 3 2 1	SELDOM 1		<input type="checkbox"/>
3. How well does the child participate in group activities when compared to classmates (e.g., calendar, sharing)?	ABOVE 5	AVERAGE 4 3 2 1	BELOW 1		
4. How distractible is the child in comparison to his/her classmates during large group activities?	SELDOM 5	OCCASIONAL 4 3 2 1	FREQUENT 1	ATTENTION	
5. What is the child's attention span in comparison to classmates?	LONGER 5	AVERAGE 4 3 2 1	SHORTER 1		<input type="checkbox"/>
6. How well does the child pay attention during a small group activity or story time?	ABOVE 5	AVERAGE 4 3 2 1	BELOW 1		
7. How does the child's vocabulary and word usage skills compare to classmates?	ABOVE 5	AVERAGE 4 3 2 1	BELOW 1	COMMUNICATION	
8. How proficient is the child at relating an event when compared to classmates?	ABOVE 5	AVERAGE 4 3 2 1	BELOW 1		<input type="checkbox"/>
9. How does the child's overall speech intelligibility compare to classmates (i.e., production of speech sounds)?	ABOVE 5	AVERAGE 4 3 2 1	BELOW 1		
10. How often does the child answer questions appropriately (verbal or signed)?	ALMOST ALWAYS 5	FREQUENTLY 4 3 2 1	SELDOM 1	CLASS PARTICIPATION	
11. How often does the child share information during group discussions?	ALMOST ALWAYS 5	FREQUENTLY 4 3 2 1	SELDOM 1		<input type="checkbox"/>
12. How often does the child participate with classmates in group activities or group play?	ALMOST ALWAYS 5	FREQUENTLY 4 3 2 1	SELDOM 1		
13. Does the child play in socially acceptable ways (i.e., turn taking, sharing)?	ALMOST ALWAYS 5	FREQUENTLY 4 3 2 1	SELDOM 1	SOCIAL BEHAVIOR	
14. How proficient is the child at using verbal language or sign language to communicate effectively with classmates (e.g., asking to play with another child's toy)?	ABOVE 5	AVERAGE 4 3 2 1	BELOW 1		<input type="checkbox"/>
15. How often does the child become frustrated, sometimes to the point of losing emotional control?	NEVER 5	SELDOM 4 3 2 1	FREQUENTLY 1		

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**TEACHER COMMENTS:** (frequent absences, health problems, other problems or handicaps in addition to hearing?)

**The Preschool S.I.F.T.E.R. is a SCREENING TOOL ONLY.** The primary goal of the Preschool S.I.F.T.E.R. is to identify those children who are at-risk for developmental or educational problems due to hearing problems and who merit further observation and investigation. Analysis has revealed that two factors, expressive communication and socially appropriate behavior, discriminate children who are normal from those who are at-risk. The greater the degree of hearing problem, the greater the impact on these two factors and the higher the validity of this screening measure. If a child is found to be at-risk then the examiner is encouraged to calculate the total score in each of the five content areas. Analysis of the content area score may assist in developing a profile of the child's strengths and special needs. The profile may prove beneficial in determining appropriate areas for evaluation and developing an individual program for the child.

**SCORING**

There are two steps to the scoring process. First, enter scores for each of the indicated questions in the spaces provided and sum the total of the 6 questions for the expressive communication factor and then the 4 questions for the socially appropriate behavior factor. If the child's scores fall into the At-Risk category for either or both of these factors, then sum the 3 questions in each content area to develop a profile of the child's strengths and potential areas of need.

Enter circled response from reverse side for each indicated question

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
EXPRESSIVE COMMUNICATION						SOCIALLY APPROPRIATE BEHAVIOR								
Total Score 6 questions						Total Score 4 questions								

**EXPRESSIVE COMMUNICATION**  
(check one)

**PASS (14 - 30)**   
score range

**AT-RISK (6 - 13)**   
score range

**SOCIALLY APPROPRIATE BEHAVIOR**  
(check one)

**PASS (12 - 20)**   
score range

**AT-RISK (4 - 11)**   
score range

**SKILLS PROFILE**

CONTENT AREA	TOTAL SCORE (enter)	PASS RANGE	AT-RISK RANGE	SCREENING RESULTS (circle)	
PREACADEMICS		7 - 15	3 - 6	Pass	At-Risk
ATTENTION		9 - 15	3 - 8	Pass	At-Risk
COMMUNICATION		9 - 15	3 - 8	Pass	At-Risk
CLASS PARTICIPATION		7 - 15	3 - 6	Pass	At-Risk
SOCIAL BEHAVIOR		9 - 15	3 - 8	Pass	At-Risk

Sum the responses to the 3 questions in each content area from the reverse side. Enter the total score for each content area in the Total Score column above.

## Appendix Y (b)

# Secondary S.I.F.T.E.R.

## Screening Instrument For Targeting Educational Risk in Secondary Students

By Karen L. Anderson, Ph.D.

This scale has been designed to screen for educational risk in secondary students that have hearing loss. The effects of hearing impairment are frequently invisible. Regular monitoring of performance can assist in determining if a student is successfully accessing verbal instruction in the typical classroom. Based on your observations and familiarity with this student, circle the number that best represents his or her behavior.

Student's Name \_\_\_\_\_ Grade \_\_\_\_\_

Class \_\_\_\_\_ Teacher \_\_\_\_\_ Date \_\_\_\_\_

School \_\_\_\_\_ Student typically uses amplification? **Yes No** Type \_\_\_\_\_

Academics	1. How does the student's general foundation skills (i.e., reading level) compare to the difficulty of work expected in class?	Above 5	Average 4	Below 3	2	1
	2. How does the student's ability to summarize and draw conclusions about information presented in class compare to his/her class peers?	Above 5	Average 4	Below 3	2	1
	3. How does the student's demonstration of academic skill growth compare to class peers/expectations?	Above 5	Average 4	Below 3	2	1
Attention	1. When called upon and asked a question, how often does the student appear to have been attending to teacher instruction? (he/she appears to understand the basis of the question)	Always 5	Often 4	Rarely 3	2	1
	2. How successful is the student at avoiding distraction by noises, visual distractions, personal items, or activities unrelated to class instruction?	Always 5	Often 4	Rarely 3	2	1
	3. How does the student's attention to detail compare to class peers/expectations (avoiding careless mistakes)?	Above 5	Average 4	Below 3	2	1
Communication	1. How well does the student communicate his/her needs to the teacher in comparison to class peers/expectations?	Above 5	Average 4	Below 3	2	1
	2. How does the student's word usage skills compare to class peers/expectations (i.e., written, verbal, signed vocabulary)?	Above 5	Average 4	Below 3	2	1
	3. What is your estimate of the student's ability to assimilate teacher instruction (presented verbally or visually) in comparison to class peers/expectations?	Above 5	Average 4	Below 3	2	1
Class Participation	1. In comparison to class peers, what is the student's present level of meaningful contribution to classroom discussions?	Above 5	Average 4	Below 3	2	1
	2. To what level does the student demonstrate a recognition that participation is an integral part of the learning process?	Above 5	Average 4	Below 3	2	1
	3. During cooperative group activities, how often does the student interact with others to achieve the goals of group work?	Always 5	Often 4	Rarely 3	2	1
School Behavior	1. How often does the student demonstrate respectful behavior toward others in class (peers and teacher)?	Always 5	Frequently 4	Occasionally 3	2	1
	2. How often does the student follow classroom rules compared to class peers/expectations?	Always 5	Frequently 4	Occasionally 3	2	1
	3. To what level does the student appear to be accepted by his/her peers?	Popular 5	Average 4	Isolated 3	2	1

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## TEACHER COMMENTS

Has the student had frequent absences or experienced health problems? Does the student receive special services? Does the student have any problems that may be pertinent to his/her educational performance?

### THE SECONDARY SIFTER IS A SCREENING TOOL ONLY

Students scoring in the failing range have scored in a manner consistent with students that scored at greater than one standard deviation below the mean compared to a group of 97 secondary students (40 with normal hearing, 57 with hearing impairment). Students scoring in the marginal range have scored similar to test group students scoring below the mean and -1 standard deviation. Scores falling within both PASS and MARGINAL range occur within the broad range of normal performance as compared to the test group. Students scoring in the pass range have scored in a manner consistent to those in the test group who were at or above the group mean. Any student failing this screening in a content area as determined on the scoring grid below should be considered for educational accommodations or services specific to improving the student's access to instruction and success in the regular classroom.

### SCORING

Sum the responses to the three questions in each content area, and record in the appropriate box under Total Score below. Place an X on the number that corresponds most closely with each content area score (e.g., if a teacher circled a 3, 4, and 2 for the questions in the Academics area, an X would be placed on the number 9 across from the Academics content area). Connect the X's to make a profile.

CONTENT AREA	TOTAL SCORE	PASS	MARGINAL	FAIL
ACADEMICS		15 14 13 12 11 10	9 8	7 6 5 4 3 2 1
ATTENTION		15 14 13 12 11 10	9 8 7	6 5 4 3 2 1
COMMUNICATION		15 14 13 12 11 10	9 8	7 6 5 4 3 2 1
CLASS PARTICIPATION		15 14 13 12 11 10 9	8 7	6 5 4 3 2 1
SCHOOL BEHAVIOR		15 14 13 12 11	10 9	8 7 6 5 4 3 2 1
		+1 SD	Mean	-1 SD    -2 SD

## Appendix Y (c)

# S.I.F.T.E.R.

### SCREENING INSTRUMENT FOR TARGETING EDUCATIONAL RISK

*by Karen L. Anderson, Ed.S., CCC-A*

STUDENT \_\_\_\_\_ TEACHER \_\_\_\_\_ GRADE \_\_\_\_\_

DATE COMPLETED \_\_\_\_\_ SCHOOL \_\_\_\_\_ DISTRICT \_\_\_\_\_

The above child is suspect for hearing problems which may or may not be affecting his/her school performance. This rating scale has been designed to sift out students who are educationally at risk possibly as a result of hearing problems. Based on your knowledge from observations of this student, circle the number best representing his/her behavior. After answering the questions, please record any comments about the student in the space provided on the reverse side.

1. What is your estimate of the student's class standing in comparison of that of his/her classmates?	UPPER 5	4	MIDDLE 3	2	LOWER 1	<b>ACADEMICS</b>	<input type="checkbox"/>
2. How does the student's achievement compare to your estimation of her/her potential?	EQUAL 5	4	LOWER 3	2	MUCH LOWER 1		
3. What is the student's reading level, reading ability group or reading readiness group in the classroom (e.g., a student with average reading ability performs in the middle group)?	UPPER 5	4	MIDDLE 3	2	LOWER 1		
4. How distractible is the student in comparison to his/her classmates?	NOT VERY 5	4	AVERAGE 3	2	VERY 1	<b>ATTENTION</b>	<input type="checkbox"/>
5. What is the student's attention span in comparison to that of his/her classmates?	LONGER 5	4	AVERAGE 3	2	SHORTER 1		
6. How often does the student hesitate or become confused when responding to oral directions (e.g., "Turn to page . . .")?	NEVER 5	4	OCCASIONALLY 3	2	FREQUENTLY 1		
7. How does the student's comprehension compare to the average understanding ability of her/her classmates?	ABOVE 5	4	AVERAGE 3	2	BELOW 1	<b>COMMUNICATION</b>	<input type="checkbox"/>
8. How does the student's vocabulary and word usage skills compare with those of other students in his/her age group?	ABOVE 5	4	AVERAGE 3	2	BELOW 1		
9. How proficient is the student at telling a story or relating happenings from home when compared to classmates?	ABOVE 5	4	AVERAGE 3	2	BELOW 1		
10. How often does the student volunteer information to class discussions or in answer to teacher questions?	FREQUENTLY 5	4	OCCASIONALLY 3	2	NEVER 1	<b>CLASS PARTICIPATION</b>	<input type="checkbox"/>
11. With what frequency does the student complete his/her class and homework assignments within the time allocated?	ALWAYS 5	4	USUALLY 3	2	SELDOM 1		
12. After instruction, does the student have difficulty starting to work (looks at other students working or asks for help)?	NEVER 5	4	OCCASIONALLY 3	2	FREQUENTLY 1		
13. Does the student demonstrate any behaviors that seem unusual or inappropriate when compared to other students?	NEVER 5	4	OCCASIONALLY 3	2	FREQUENTLY 1	<b>SCHOOL BEHAVIOR</b>	<input type="checkbox"/>
14. Does the student become frustrated easily, sometimes to the point of losing emotional control?	NEVER 5	4	OCCASIONALLY 3	2	FREQUENTLY 1		
15. In general, how would you rank the student's relationship with peers (ability to get along with others)?	GOOD 5	4	AVERAGE 3	2	POOR 1		

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### TEACHER COMMENTS

Has this child repeated a grade, had frequent absences or experienced health problems (including ear infections and colds)? Has the student received, or is he/she now receiving, special services? Does the child have any other health problems that may be pertinent to his/her educational functioning?

#### The S.I.F.T.E.R. is a SCREENING TOOL ONLY

Any student failing this screening in a content area as determined on the scoring grid below should be considered for further assessment, depending on his/her individual needs as per school district criteria. For example, failing in the Academics area suggests an educational assessment, in the Communication area a speech-language assessment, and in the School Behavior area an assessment by a psychologist or a social worker. Failing in the Attention and/or Class Participation area in combination with other areas may suggest an evaluation by an educational audiologist. Children placed in the marginal area are at risk for failing and should be monitored or considered for assessment depending upon additional information.

#### SCORING

Sum the responses to the three questions in each content area and record in the appropriate box on the reverse side and under Total Score below. Place an **X** on the number that corresponds most closely with the content area score (e.g., if a teacher circled 3, 4 and 2 for the questions in the Academics area, an X would be placed on the number 9 across from the Academics content area). Connect the X's to make a profile.

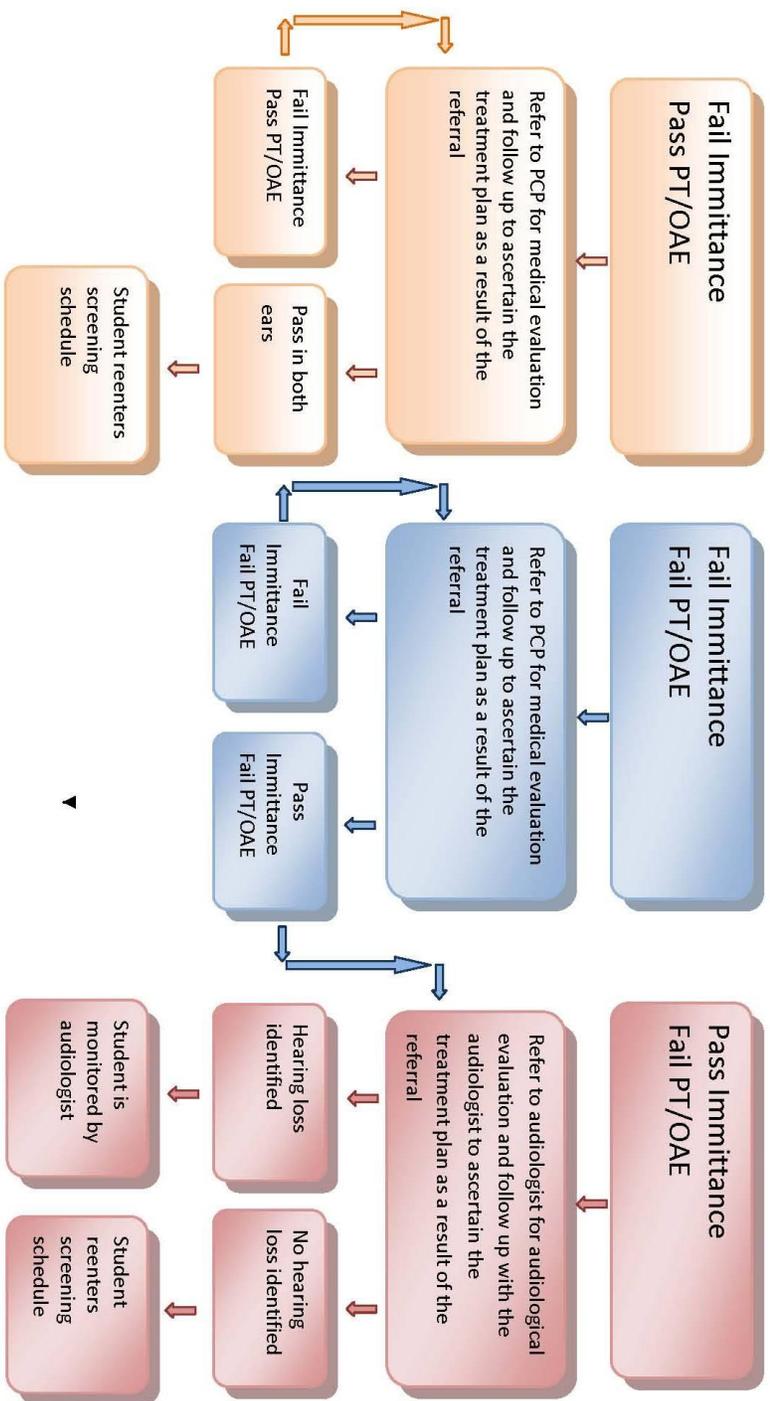
CONTENT AREA	TOTAL SCORE	PASS						MARGINAL			FAIL					
ACADEMICS		15	14	13	12	11	10	9	8		7	6	5	4	3	
ATTENTION		15	14	13	12	11	10	9	8	7		6	5	4	3	
COMMUNICATION CLASS PARTICIPATION		15	14	13	12	11		10	9	8		7	6	5	4	3
SOCIAL BEHAVIOR		15	14	13	12	11	10	9	8		7	6	5	4	3	





# Appendix 1

## K-12 Only Flow Chart



DISPOSITION OF HEARING **RESREENS**<sup>1,2</sup>  
K-12 Students

Legend: PT=Pure tones; OAE=Otoacoustic emissions; PCP=Primary care physician

<sup>1</sup>All students failing any component of the initial screening in one or both ears are rescreened in 4-6 weeks.

<sup>2</sup>All students being rescreened receive otoscopic inspection, immittance, and PT/OAEs in both ears.

## ORGANIZATION OF LOHL SCREENING RESULTS PAPER TRAIL

### I. Hearing Screening Results Notebook (A-Z)

Please use this notebook to keep a copy of all the hearing screenings (pass and fail) that are done by your facility. Please use the A-Z tables that have been provided to organize the results alphabetically by the child's last name. These notebooks are organized to be used from August 2007 to July 2008 with a new notebook used annually.

### II. Hearing Re-screening Results Notebook

Please use this notebook to organize the hearing screening results of children who fail their initial hearing screening and are in need of follow-up screening(s). Please make a copy of the child's original hearing screening results form and place it behind the child's screening location (Child Development Center, Home, etc) alphabetically by the child's last name.

- a. Child Development Center, Kid's Screened at Home, Home Daycares, etc: These are possible tab titles of locations at which children may screened. Please add additional tabs for each location at which your facility provides screenings. (i.e. Headstart, Betty's Preschool, Dottie's Daycare, etc.)
- b. Forms: Behind this tab you can keep extra copies of the Hearing Screening Results Form.
- c. Brochures: Keep a supply of Late Onset Hearing Loss Brochures here so you can be sure to distribute them to the parent(s)/caregivers of the children you screen.

## ORGANIZATION OF LOHL SCREENING RESULTS PAPER TRAIL

### I. Hearing Screening Results Form

This form is to be filled completed for each child who receives a hearing screening from a Wyoming Child Development Center. One form per child is recommended. Serial screening results may be recorded in an ongoing manner.

- a. Demographic Information: Child's Name, DOB, and Gender are all **required** information. Parent(s)/Caregiver and physician information is optional, however, it is great information to have, especially if the child is in need of follow-up care.
- b. Risk Factors for Late Onset Hearing Loss Not Present/Noted at Birth: These are risk factors often associated with late onset hearing loss. Please check any risk factor(s) that the child may have. Some children may not have any and some may have more than one. It is recommended that children who are at risk for hearing loss be screened annually unless concerns arise or a change in hearing is noted.
- c. Early Intervention Status: If the child is receiving early intervention, please check what program he/she is in along with the "Start Date" and "Next Annual Review Date". This information will help to ensure that the hearing screening technician and the child's case manager are working together to provide the best care possible for the child.
- d. Known Hearing Loss: If the child has been diagnosed with a known hearing loss, please check the "Yes" box. If not, check the "No" box.
- e. Notes: Use this space to write any notes/information about the child that may be beneficial to you, parent's, physicians, etc.
- f. Hearing Screening Results: This is where you will write down the child's hearing screening results. Use the box to display the results of each ear, as well as the follow-up recommendation that was made for the child and any medical and/or audiological follow-up care that was done. (Please use the recommendations from section VI and medical and/or audiological follow-up from section VII).
- g. Follow-up Recommendations: Use these recommendations in the Hearing Screening Results box in section V. Write the number that corresponds with the recommendation made for the child in the appropriate box above.
- h. Follow-up to Medical and/or Audiological Referral: Use these follow-up to referrals in the Hearing Screening Results box in section V. Write the number that corresponds with the follow-up that was made for the child in the appropriate box above.

It is important that these forms are filled out accurately providing as much detail as possible. These forms will be used to enter the child's hearing screening results into the EHDI Phase III Tracking Software.

## HEARING SCREENING RESULTS FORM

\*Required Information

(Please Print)  
 Classroom/Screening Location: \_\_\_\_\_  
 Child's Name\*: \_\_\_\_\_ DOB\*: \_\_\_\_\_ Gender\*:  M  F  
 Parent(s)/Caregiver: \_\_\_\_\_ Phone: \_\_\_\_\_  
 Parent(s)/Caregiver Address: \_\_\_\_\_  
 Child's Physician \_\_\_\_\_ Permission to send results to Physician:  Yes  No  
 If necessary, permission to rescreen:  Yes  No

**I. Hearing Screen Results:** (Please use this space to display results of hearing screenings conducted throughout the year)

Screen Date	Ear	IMMITTANCE						PURE TONES			Pass (P) / Fail (F) per ear	Recommendation (use #'s 1-10) See Below	Follow-up to Referral (Date/Result) (use #'s 1-13) See Below	Screener Initials	Audiologist Review	Results entered into Database Software	Screening Administered	Notes	
		OTOSCOPIC	ECV	TM COMP	MEP	ACOUSTIC REFLEX	1,000 Hz	2,000 Hz	4,000 Hz	OTOACOUSTIC EMISSIONS (OAE)									
	R																		
	L																		
	R																		
	L																		
	R																		
	L																		
	R																		
	L																		

**II. Follow-up Recommendations:** (Please choose one based on hearing screening results)

1. Rescreen in 12 months unless concerns arise or a change in hearing is noted. Hearing levels appear adequate for speech/language development at this time.
2. Rescreen in 3 months. Hearing levels appear adequate for speech/language development at this time.
3. Rescreen in 4-6 weeks.
4. Refer to Primary Care Physician and rescreen in 4-6 weeks.
5. Refer to Primary Care Physician and rescreen in 3 months.
6. Refer to ENT for medical and audiological evaluation and rescreen in 4-6 weeks.
7. Refer to ENT for medical and audiological evaluation and rescreen in 3 months.
8. Refer to Audiologist and rescreen in 4-6 weeks.
9. Refer to Audiologist and rescreen in 3 months.
10. Other \_\_\_\_\_
11. IFSP Review \_\_\_\_\_

**III. Follow-up to Medical and/or Audiological Referral:** (Please choose one for each referral made)

1. Physician confirmed medical condition.
2. Physician did not confirm medical condition.
3. Audiologist confirmed hearing loss (conductive, SNHL, mixed).
4. Audiologist reports hearing within normal limits at all frequencies.
5. Pressure equalization tubes placed.
6. Per parent report, medical referral has not been acted upon. Child has not been seen by doctor.
7. Per parent report, audiological referral has not been acted upon. Child has not been seen by audiologist.
8. Per parent report, medical appointment/follow-up is scheduled, but pending.
9. Per parent report, audiological appointment/follow-up is scheduled, but pending.
10. Phone call to parent. No answer. Left message asking them to call.
11. Phone call to parent. No answer. Did not leave message.
12. Letter sent to parent.
13. Other \_\_\_\_\_

**IV. Risk Factors for Late Onset Hearing Loss Not Present/Noted at Birth:** (check all that apply)

- 1. Parental or caregiver concern regarding hearing, speech, language, and/or developmental delay.
- 2. Syndromes associated with progressive hearing loss such as Neurofibromatosis, Osteopetrosis, and Usher's Syndrome.
- 3. Head trauma.
- 4. Recurrent or persistent Otitis Media with effusion for at least 3 months.
- 5. Other: \_\_\_\_\_
- 6. None

**V. Early Intervention Status:**

- IFSP     IEP     Referred for Developmental Evaluation     No Early Intervention at this time

IFSP/IEP Start Date: (If Applicable) \_\_\_\_\_

Next IFSP/IEP Annual Review Date: (If Applicable) \_\_\_\_\_

Other: \_\_\_\_\_

**VI. Known Hearing Loss**

- Yes     No

**VII. Notes:**

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

<b>Legend</b>	
DNT	= did not test
CNT	= could not test
CNE	= could not establish
MEP	= middle ear pressure
COMF	= tympanic membrane (movement) compliance
ECV	= ear canal volume (physical size)
OTO	= otoscopy
OAE	= otoacoustic emissions

## SAMPLE LETTERS FOR PARENT NOTIFICATION

(To be printed on facility letterhead)

### Referral to Child's Primary Care Physician

(Date)

Dear (Parent/Guardian),

Recently (child's name)'s hearing was screened. (Child's name)'s hearing screening results fell outside the typical range for his age at the time of the screening.

It is recommended that you share these results with (child's name)'s primary care physician for his/her review and ask for any medical recommendations they may have. Enclosed you will find (child's name)'s most recent hearing screening results. For your convenience we have enclosed a second copy to take to (child's name)'s physicians.

Hearing plays a vital and often subtle role in the early development of children. Children learn speech and language from listening to others speak. The first few years of life are especially critical for speech and language development. If hearing loss exists, a child may not be able to receive optimal benefit from spoken language during this period of growth, and as a result, delays in speech and language may occur. Many hearing problems in children are minimal, yet developmentally significant. It is important that even slight hearing loss be identified so that appropriate developmental management can be provided. Many hearing losses are temporary and may be successfully treated with medical attention.

If you have any questions, comments or concerns about the hearing screening results or about our hearing conservation program, please contact me or the hearing screening technician at (phone number).

Sincerely,

(Hearing Screener's Name)

Enclosure

Referral to Ear, Nose and Throat Doctor

(Date)

Dear (Parent/Guardian),

Recently (child's name)'s hearing was screened. (Child's name)'s hearing screening results fell outside the typical range for her age at the time of the screening.

It is recommended that you share these results with (child's name)'s Ear Nose and Throat Doctor for his/her review and ask for his or her medical recommendations. Enclosed you will find (child's name)'s hearing screening results. For your convenience we have enclosed a second copy to take to (child's name)'s physician.

Hearing plays a vital and often subtle role in the early development of children. Children learn speech and language from listening to others speak. The first few years of life are especially critical for speech and language development. If hearing loss exists, a child may not be able to receive optimal benefit from spoken language during this period of growth, and as a result, delays in speech and language may occur. Many hearing problems in children are minimal, yet developmentally significant. It is important that even slight hearing loss be identified so that appropriate developmental management can be provided. Many hearing losses are temporary and may be successfully treated with medical attention.

If you have any questions, comments or concerns about the hearing screening results or about our hearing conservation program, please contact me or the hearing screening technician at (phone number).

Sincerely,

(Hearing Screener's Name)

Enclosure

## Referral to Audiologist

(Date)

Dear (Parent/Guardian),

Recently (child's name)'s hearing was screened. (Child's name)'s results continue to fall outside the typical range for his age.

Enclosed you will find (child's name)'s most recent hearing screening results. For your convenience we have enclosed a second copy. We recommended that you schedule an appointment for a complete age appropriate hearing evaluation for (child's name). If you need contact information for audiologists, we would be happy to supply that information to you.

Hearing plays a vital and often subtle role in the early development of children. Children learn speech and language from listening to others around them. The first few years of life are especially critical for speech and language development. If hearing loss exists, a child may not be able to receive optimal benefit from spoken language during this period of growth, and as a result, delays in speech and language may occur. Many hearing problems in children are minimal, yet developmentally significant. It is important that even the slightest hearing loss be identified so that appropriate developmental management can be provided. Many hearing losses are temporary and may be successfully treated with medical attention.

If you have any questions, comments or concerns about the screening results or about our hearing conservation program, please contact me or the hearing screening technician at (phone number).

Sincerely,

(Hearing Screener's Name)

Enclosure

## EHDI Tracking Software Description (Phase I, II and III)

The goal of the Wyoming Early Hearing Detection and Intervention (EHDI) Program is to provide better outcomes for Wyoming children with hearing loss and their families through early screening, diagnosis, intervention, and tracking.

### **Phase I**

#### Tracking Newborn Hearing Screening Results

- Software has been in use since 2004
- Nurses at the 21 birthing hospitals in Wyoming screen 98% of newborns for hearing loss before the babies leave the hospital.
- The newborn hearing screening method is an Automated Auditory Brainstem Response (AABR).
- The results of the newborn hearing screenings are reported monthly to the Wyoming EHDI Program.
- Newborns that fail the hearing screening twice at the birthing hospital are referred to an audiologist for a pediatric diagnostic test battery to determine the amount of hearing loss present.
- The use of this software alerts the PCP if their patient fails the newborn hearing screening.
- The use of this software alerts parents if their infant needs follow up.

### **Phase II**

#### Tracking Diagnostic Results of Children Who Are Referred from the Hospital and Late Onset Hearing Loss Screenings

- Audiologists perform a battery of pediatric diagnostic evaluations to determine the degree of hearing loss for children referred from newborn hearing screenings.
- Web-based reporting of results is available on the EHDI Tracking Software.
- Results for an individual child will be reported to the Wyoming EHDI Program after each audiological appointment and probably will be entered by child development center staff.
- Results will be available to early interventionists that work with children with hearing loss and who have registered with the program.

### **Phase III**

#### Tracking Hearing Screening Results from Child Development Centers (Late Onset Hearing Loss)

- Screenings are done year-round by personnel at Child Development Centers for children age birth to 5 years of age.
- Screenings include all children who have a developmental screening (“1 before 2”, Child Find, Physician referrals, parent request, etc), children who have an IFSP or IEP.
- Screening methods consist of Otoscopy, Immittance, and Pure Tones or Otoacoustic Emissions (OAE).
- Results will be web-based and reported to the Wyoming EHDI Program.

**Wyoming Department of Health  
Behavioral Health Division  
Early Intervention and Education Program  
Early Hearing Detection and Intervention (EHDI) Program  
715 Shield Street  
Laramie, WY 82072  
307-721-6212 (voice)  
307-721-6313 (fax)**

Date \_\_\_\_\_

Dear Early Intervention Provider:

The Wyoming Department of Health – Behavioral Health Division, Early Intervention and Education Program, Early Hearing Detection and Intervention (EHDI) Program, would like to invite you to participate in the Wyoming EHDI Database Project. The Wyoming EHDI Database is operational and currently available to facilities that provide early intervention services for Wyoming children.

The Wyoming EHDI database currently has more than 20,000 Wyoming children's birth hearing screening records stored on the central database. The 21 Wyoming birthing hospitals have made a successful effort to submit hearing screening data. Historical EHDI records since 2004 have been entered into the Wyoming EHDI database.

Early intervention providers/programs expend valuable energy completing and tracking hearing screening results for Wyoming children so that appropriate follow-up occurs. The intent of the Wyoming EHDI Database is to centralize a child's EHDI record so no matter where a child is seen for their next hearing screening or diagnostic audiological evaluation, the early intervention provider has one place to go to obtain a child's complete EHDI record. The results of the hearing screenings obtained by Child Development Center personnel may be directly entered into the EHDI database through the web application.

There are several useful management tools available to the service providers through the EHDI Database web application. These tools include:

- ⌚ Child's individual EHDI birth record
- ⌚ Risk factors present at birth as they relate to late onset hearing loss
- ⌚ History of subsequent hearing screening results for each individual child
- ⌚ Printable reports of the child's hearing screening results
- ⌚ Monthly submission of hearing screening data to WY EHDI program
- ⌚ "To Do" List for managing the early intervention facility's hearing screening list

The Wyoming Department of Health is a covered entity under HIPAA. Data sharing agreements with the providers will protect the confidentiality of the EHDI record. User ID and passwords will be established to allow early intervention program staff access to the EHDI database. Copies of the data sharing agreements are enclosed for your reference.

The Wyoming EHDI Program staff are available to discuss the opportunity for you to participate with the Wyoming EHDI Database. They are also available to conduct an onsite demonstration of the web application, if needed. Please call us at 307-721-6212 to discuss any needs you may have as it pertains to the Wyoming EHDI Database.

This is a great opportunity for the Wyoming Department of Health – Behavioral Health Division, Early Intervention and Education Program, EHDI Program to partner with early intervention program staff to further improve the quality of development for Wyoming children. We look forward to working with you. Please call if you have any comments, questions or concerns regarding the enclosed paperwork.

Sincerely,

Sara Mofield  
Early Intervention Program Manager

Nancy Pajak, M.S. CCC-A  
EHDI Project Manager

Sarah Fitzgerald  
EHDI Follow Up Coordinator

*Enclosures:*  
*Provider Enrollment Agreement*  
*Individual User and Confidentiality Agreement*

**Wyoming Department of Health  
Behavioral Health Division  
Early Intervention and Education Program  
Early Hearing Detection and Intervention (EHDI) Program  
715 Shield Street  
Laramie, WY 82072  
307-721-6212 (voice)  
307-721-6313 (fax)**

Date \_\_\_\_\_

Dear Vision Screening Provider:

The Wyoming Department of Health – Behavioral Health Division, Early Intervention and Education Program, Early Hearing Detection and Intervention (EHDI) Program, would like to invite you to participate in the Wyoming EHDI Database Project. The Wyoming EHDI Database is operational and currently available to facilities that provide developmental and educational services for Wyoming children.

Early intervention providers/programs expend valuable energy completing and tracking vision screening results for Wyoming children so that appropriate follow-up occurs. The intent of the Wyoming EHDI Database is to centralize a child's EHDI record so no matter where a child is seen for their next vision screening or vision evaluation, the early intervention provider has one place to go to obtain a child's complete vision screening record. The results of the vision screenings obtained by Child Development Center personnel may be directly entered into the EHDI database through the web application.

There are several useful management tools available to the service providers through the EHDI Database web application. These tools include:

- ⌚ Child's individual vision screening record
- ⌚ Risk factors as they relate to late onset vision loss
- ⌚ History of subsequent vision screening results for each individual child
- ⌚ Printable reports of the child's vision screening results
- ⌚ Monthly submission of vision screening data to WY EHDI program
- ⌚ "To Do" List for managing the facility's vision screening list

The Wyoming Department of Health is a covered entity under HIPAA. Data sharing agreements with the providers will protect the confidentiality of the EHDI record. User ID and passwords will be established to allow early intervention program staff access to the EHDI database. Copies of the data sharing agreements are enclosed for your reference.

The Wyoming EHDI Program staff is available to discuss the opportunity for you to participate with the Wyoming EHDI Database. They are also available to conduct an onsite demonstration of the web application, if needed. Please call us at 307-721-6212 to discuss any needs you may have as it pertains to the Wyoming EHDI Database.

This is a great opportunity for the Wyoming Department of Health – Behavioral Health Division, Early Intervention and Education Program, EHDI Program to partner with early intervention program staff to further improve the quality of development for Wyoming children with vision loss. We look forward to working with you. Please call if you have any comments, questions or concerns regarding the enclosed paperwork.

Sincerely,

Sara Mofield  
Early Intervention Program Manager

Nancy Pajak, M.S. CCC-A  
EHDI Project Manager

Sarah Fitzgerald  
EHDI Follow Up Coordinator

*Enclosures:*  
*Provider Enrollment Agreement*  
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Wyoming Department of Health  
Behavioral Health Division  
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Early Hearing Detection and Intervention (EHDI) Program  
715 Shield Street  
Laramie, WY 82072  
307-721-6212 (voice)  
307-721-6313 (fax)

## Provider Enrollment Agreement

The Wyoming Early Hearing Detection and Intervention (EHDI) Program uses a web-based database operated by the Wyoming Department of Health (WDH) Behavioral Health Division, Early Intervention and Education Program, EHDI Program. Enrolled providers can obtain hearing information for children, including tracking and recall. Child information is confidential and is only available to the authorized users of the registry. The hearing screening records of all children in Wyoming may be included in the system. An individual or parent or guardian may choose not to have their child's records included in the database or withdraw at any time.

The authority to prescribe rules and regulations for the management and control of newborn hearing screening is contained in Wyoming Statute 35-4-801 and 35-4-802.

Name of Provider Organization:		Type of Organization: Public _____ Private _____
Provider/Organization's Representative:		
Title of the Organization's Representative:		
Street address:		
City:	State:	Zip:
Phone: ( )	FAX: ( )	E-mail:

As a condition of participating in the Wyoming EHDI Database the above Provider enters into this agreement with the Wyoming Department of Health, and agrees to the following:

- To use the Wyoming EHDI Database only for the hearing needs of children. The Provider and his or her staff will access the registry to:
  - Assure appropriate follow-up hearing screenings,
  - Assure appropriate medical follow-up,
  - Assure appropriate audiological diagnostic evaluations,
  - Assure appropriate enrollment in early intervention,
  - Conduct ongoing audiological management.
- If this agreement is violated by any use of the database in an unauthorized manner, WDH reserves the right to terminate access to the database.
- The Provider shall abide by the requirements in the Individual User and Confidentiality Agreement, which is incorporated by reference into this agreement. Each staff member needing

access to the Wyoming EHDI Database must sign the Wyoming EHDI Individual User and Confidentiality Agreement, which must be kept with the employee's Personnel File.

- The Provider acknowledges that unauthorized disclosure of confidential information may result in civil and/or criminal penalties. The Provider will take all reasonable steps to assure employee compliance with confidentiality requirements.
- The Provider shall cooperate with WDH in notifying parents or guardians about the system.
- The Provider shall furnish specified demographic and hearing information about children's hearing screenings on a prompt basis, striving for submission within one week after screening results are obtained.

Signing this form signifies agreement to be a Wyoming EHDI Program authorized user. Please sign the form, keep a copy for yourself, and mail the original to the Wyoming Department of Health, Behavioral Health Division, Early Intervention and Education Program, EHDI Program, 715 Shield Street, Laramie, WY 82072.

\_\_\_\_\_  
Signature of Provider or Authorized Representative

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature of Wyoming Department of Health  
Behavioral Health Division, Early Intervention and Education  
Program Representative

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature of Wyoming EHDI Program Manager

\_\_\_\_\_  
Date

Wyoming Department of Health  
Behavioral Health Division  
Early Intervention and Education Program  
Early Hearing Detection and Intervention (EHDI) Program  
715 Shield Street  
Laramie, WY 82072  
307-721-6212 (voice)  
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## Provider Enrollment Agreement

The Wyoming Early Hearing Detection and Intervention (EHDI) Program uses a web-based database operated by the Wyoming Department of Health (WDH) Behavioral Health Division, Early Intervention and Education Program, EHDI Program. Enrolled providers can obtain vision screening information for children, including tracking and recall. Child information is confidential and is only available to the authorized users of the registry. The vision screening records of all children in Wyoming may be included in the system. An individual or parent or guardian may choose not to have their child's records included in the database or withdraw at any time.

Name of Provider Organization:		Type of Organization: Public _____ Private _____	
Number of Early Intervention Sites in Organization:			
Provider/Organization's Representative:			
Title of the Organization's Representative:			
Street address:			
City:	State:	Zip:	
Phone: ( )	FAX: ( )	E-mail:	

As a condition of participating in the Wyoming EHDI Database the above Provider enters into this agreement with the Wyoming Department of Health, and agrees to the following:

- To use the Wyoming EHDI Database only for the vision needs of children. The Provider and his or her staff will access the registry to:
  - Assure appropriate follow-up vision screenings,
  - Assure appropriate medical follow-up,
  - Assure appropriate vision evaluations,
  - Assure appropriate enrollment in early intervention,
  - Conduct ongoing vision management.
- If this agreement is violated by any use of the database in an unauthorized manner, WDH reserves the right to terminate access to the database.
- The Provider shall abide by the requirements in the Individual User and Confidentiality Agreement, which is incorporated by reference into this agreement. Each staff member needing access to the Wyoming EHDI Database must sign the Wyoming EHDI Individual User and Confidentiality Agreement, which must be kept with the employee's Personnel File.

- The Provider acknowledges that unauthorized disclosure of confidential information may result in civil and/or criminal penalties. The Provider will take all reasonable steps to assure employee compliance with confidentiality requirements.
- The Provider shall cooperate with WDH in notifying parents or guardians about the system.
- The Provider shall furnish specified demographic and vision information about children's vision screenings on a prompt basis, striving for submission within one week after screening results are obtained.

Signing this form signifies agreement to be a Wyoming EHDI Program authorized user. Please sign the form, keep a copy for yourself, and mail the original to the Wyoming Department of Health, Behavioral Health Division, Early Intervention and Education Program, EHDI Program, 715 Shield Street, Laramie, WY 82072.

\_\_\_\_\_  
Signature of Provider or Authorized Representative

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature of Wyoming Department of Health  
Behavioral Health Division, Early Intervention and Education  
Program Representative

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature of Wyoming EHDI Program Manager

\_\_\_\_\_  
Date

Wyoming Department of Health  
Behavioral Health Division  
Early Intervention and Education Program  
Early Hearing Detection and Intervention (EHDI) Program  
715 Shield Street  
Laramie, WY 82072  
307-721-6212 (voice)  
307-721-6313 (fax)

## Individual User and Confidentiality Agreement

*This form shall be signed by any employee needing access to the Wyoming Early Hearing Detection and Intervention (EHDI) Tracking, Surveillance, and Information system. It defines requirements to maintain confidentiality and the employee's agreement to abide by the system's rule. The signed copy is to be kept with the Employee's Personnel File.*

The Wyoming Early Hearing Detection and Intervention (EHDI) Program is implemented by the Wyoming State Department of Health under the authority of Wyoming Statutes 35-4-801 and 35-4-802. It provides the authority to prescribe rules and regulations for the management and control of early hearing detection and tracking. The program uses a web-based database, the Wyoming EHDI Tracking, Surveillance, and Information System (Wyoming EHDI – IS) operated by the Wyoming Department of Health (WDH), Behavioral Health Division, Early Intervention and Education program, EHDI program.

All information in the EHDI system is confidential, and all users have a responsibility to abide by confidentiality laws. Users who violate these laws will have access to the Wyoming EHDI – IS immediately revoked by the Program Manager. An incident report will be filed, and following investigation, appropriate action taken, which may include civil and/or criminal penalties.

Each individual user must sign this form prior to receiving a user name and password. All users shall safeguard his/her user name and password, and agree to not give the user name and/or password to others, or to post the user name and/or password on any place. **When an authorized user leaves the facility, the manager or designee must notify the Wyoming EHDI Program staff within twenty-four (24) hours of the employee's last day of employment.**

By signing this form, the User acknowledges the conditions under which access to the Wyoming EHDI – IS is granted, and agrees to be held to the following conditions:

- Child specific information is only available to authorized users.
- He/she has read and agrees to abide by the Wyoming EHDI – IS Individual User and Confidentiality Agreement.
- Information contained in the Wyoming EHDI – IS is confidential and can only be used for those purposes outlined in the Wyoming EHDI – IS Individual User and Confidentiality Agreement.
- The Wyoming EHDI – IS passwords should be changed regularly to protect security.
- The computer should not be left unattended when a Wyoming EHDI – IS session is open.
- Always log off and close the browser when you are finished with a Wyoming EHDI – IS session.

**Behavioral Health Division, Early Intervention and Education Program**

6101 Yellowstone Road, Suite 186E • Cheyenne WY 82002

E-Mail: [chris.newman@wyo.gov](mailto:chris.newman@wyo.gov) • website: <http://www.health.wyo.gov/ddd/earlychildhood/index.html>

Phone (307) 777-7115 • Toll Free (1-800) 510-0280 • Fax (307) 777-6047

# Individual User and Confidentiality Agreement

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**Each field listed below is required.**

\_\_\_\_\_  
Print Employee Name

\_\_\_\_\_  
Email Address

\_\_\_\_\_  
User Name (can be first and last name)

\_\_\_\_\_  
Preferred Password (7 characters min.)  
(Must include 1 number and 1 letter. Do not use spaces)

PLEASE PRINT CLEARLY

Note: Passwords are case sensitive.

Role

- Administrator
- Late Onset Hearing Loss Data Clerk
- Late Onset Hearing Loss Screener
- Physician
- Audiologist

Region Number \_\_\_\_\_

Primary Practice Site (i.e. Basin, Afton, etc.)

\_\_\_\_\_  
Other Practice Sites (i.e. Worland and Thermopolis, Mountain View and Kemmerer, etc.)

\_\_\_\_\_  
Primary Work Mailing Address

\_\_\_\_\_  
Primary Work Phone Number

\_\_\_\_\_  
Street Address

\_\_\_\_\_  
City, State Zip Code

\_\_\_\_\_  
Employee Signature

\_\_\_\_\_  
Date

Date of most recently attended Hearing Screening Training Workshop \_\_\_\_\_  
(required)

**Please sign this form, keep a copy for yourself, and mail the original to the Wyoming Department of Health, Behavioral Health Division, Early Intervention and Education Program, EHDI Program, 715 Shield Street, Laramie, WY 82072.**

# Individual User and Confidentiality Agreement

## School District Personnel

By signing this form, the User acknowledges the conditions under which access to the Wyoming EHDI Program is granted, and agrees to be held to these conditions.

**Each field listed below is required.**

\_\_\_\_\_  
Print Employee Name

\_\_\_\_\_  
Email Address

\_\_\_\_\_  
User Name (can be first and last name)

\_\_\_\_\_  
Preferred Password (7 characters min.)  
*(Must include 1 number and 1 letter. Do not use spaces)*

PLEASE PRINT CLEARLY

Note: Passwords are case sensitive.

Role

- Late Onset Hearing Loss Data Clerk
- Late Onset Hearing Loss Screener
- Audiologist

School District \_\_\_\_\_

Primary Site (Burns Elementary School, etc.)

\_\_\_\_\_  
Other Sites (Burns Junior High, Burns High School, etc.)

\_\_\_\_\_  
Primary Work Mailing Address

\_\_\_\_\_  
Primary Work Phone Number

\_\_\_\_\_  
Street Address

\_\_\_\_\_  
City, State Zip Code

\_\_\_\_\_  
Employee Signature

\_\_\_\_\_  
Date

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# Individual User and Confidentiality Agreement

## Head Start Personnel

By signing this form, the User acknowledges the conditions under which access to the Wyoming EHDl Program is granted, and agrees to be held to these conditions.

**Each field listed below is required.**

\_\_\_\_\_  
Print Employee Name

\_\_\_\_\_  
Email Address

\_\_\_\_\_  
User Name (can be first and last name)

\_\_\_\_\_  
Preferred Password (7 characters min.)  
(Must include 1 number and 1 letter. Do not use spaces)

PLEASE PRINT CLEARLY

Note: Passwords are case sensitive.

Role

- Late Onset Hearing Loss Data Clerk
- Late Onset Hearing Loss Screener

Head Start Region \_\_\_\_\_

Primary Site

\_\_\_\_\_

Other Sites

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Primary Work Mailing Address

Primary Work Phone Number

\_\_\_\_\_  
Street Address

\_\_\_\_\_  
City, State Zip Code

\_\_\_\_\_  
Employee Signature

\_\_\_\_\_  
Date

Date of most recently attended Hearing Screening Training Workshop \_\_\_\_\_  
(required)

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**Each field listed below is required. PLEASE PRINT CLEARLY.**

\_\_\_\_\_  
Print Employee Name

\_\_\_\_\_  
Email Address

\_\_\_\_\_  
User Name (can be first and last name)

\_\_\_\_\_  
Preferred Password (7 characters min.)  
*(Must include 1 number and 1 letter. Do not use spaces)*

PLEASE PRINT CLEARLY

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Role

Audiologist

Primary Facility

\_\_\_\_\_  
Other Facilities

\_\_\_\_\_  
Primary Work Mailing Address

\_\_\_\_\_  
Primary Work Phone Number

\_\_\_\_\_  
Street Address

\_\_\_\_\_  
City, State Zip Code

\_\_\_\_\_  
Employee Signature

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Date

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Upon department request, state vision screening results are also housed in the EHDI database. All information in the EHDI system is confidential, and all users have a responsibility to abide by confidentiality laws. Users who violate these laws will have access to the Wyoming EHDI – IS immediately revoked by the Program Manager. An incident report will be filed, and following investigation, appropriate action taken, which may include civil and/or criminal penalties.

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### Behavioral Health Division, Early Intervention and Education Program

6101 Yellowstone Road, Suite 186E • Cheyenne WY 82002

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Print Employee Name

\_\_\_\_\_  
Email Address

\_\_\_\_\_  
User Name (can be first and last name)

\_\_\_\_\_  
Preferred Password (7 characters min.)  
(Must include 1 number and 1 letter. Do not use spaces)

PLEASE PRINT CLEARLY

Note: Passwords are case sensitive.

Role

Vision Screener

Region Number \_\_\_\_\_

Primary Site (i.e. Basin, Afton, etc.)

\_\_\_\_\_  
Other Sites (i.e. Worland and Thermopolis, Mountain View and Kemmerer, etc.)

\_\_\_\_\_  
Primary Work Mailing Address

\_\_\_\_\_  
Primary Work Phone Number

\_\_\_\_\_  
Street Address

\_\_\_\_\_  
City, State Zip Code

\_\_\_\_\_  
Employee Signature

\_\_\_\_\_  
Date

Date of most recently attended Hearing Screening Training Workshop \_\_\_\_\_  
(required)

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## School District Personnel

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\_\_\_\_\_  
Print Employee Name

\_\_\_\_\_  
Email Address

\_\_\_\_\_  
User Name (can be first and last name)

\_\_\_\_\_  
Preferred Password (7 characters min.)  
*(Must include 1 number and 1 letter. Do not use spaces)*  
PLEASE PRINT CLEARLY  
Note: Passwords are case sensitive.

Role

Vision Screener

School District \_\_\_\_\_

Primary Site (Burns Elementary School, etc.)

\_\_\_\_\_

Other Sites (Burns Junior High, Burns High School, etc.)

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Primary Work Mailing Address

Primary Work Phone Number

\_\_\_\_\_  
Street Address

\_\_\_\_\_

\_\_\_\_\_  
City, State Zip Code

\_\_\_\_\_  
Employee Signature

\_\_\_\_\_  
Date

Date of most recently attended Hearing Screening Training Workshop \_\_\_\_\_  
(required)

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# Individual User and Confidentiality Agreement

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\_\_\_\_\_  
Print Employee Name

\_\_\_\_\_  
Email Address

\_\_\_\_\_  
User Name (can be first and last name)

\_\_\_\_\_  
Preferred Password (7 characters min.)  
(Must include 1 number and 1 letter. Do not use spaces)

PLEASE PRINT CLEARLY

Note: Passwords are case sensitive.

Role

Vision Screener

Head Start Region \_\_\_\_\_

Primary Site

\_\_\_\_\_  
Other Sites

\_\_\_\_\_  
Primary Work Mailing Address

\_\_\_\_\_  
Primary Work Phone Number

\_\_\_\_\_  
Street Address

\_\_\_\_\_  
City, State Zip Code

\_\_\_\_\_  
Employee Signature

\_\_\_\_\_  
Date

Date of most recently attended Hearing Screening Training Workshop \_\_\_\_\_  
(required)

**Please sign this form, keep a copy for yourself, and mail the original to the Wyoming Department of Health, Behavioral Health Division, Early Intervention and Education Program, EHDI Program, 715 Shield Street, Laramie, WY 82072.**

## OPT OUT FORM

I understand that the state of Wyoming maintains a hearing, dental, and vision screening results database. The benefits of the database are to ensure appropriate and timely screening, follow-up and referral processes. Screening records are only accessible by authorized personnel. Records will not be released to other sources without my permission.

- I am requesting that my child's information not be included in the screening results database.

Parent/Guardian Signature \_\_\_\_\_

Date \_\_\_\_\_

## EHDI Tracking Software Comments Page

Please let us know your comments and/or suggested modifications you would recommend for future Software revisions:

1. \_\_\_\_\_  
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2. \_\_\_\_\_  
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4. \_\_\_\_\_  
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\_\_\_\_\_

5. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Please return this completed page to the Wyoming EHDI Program:

Mail to: 715 Shield Street · Laramie, WY 82072

-or-

Fax to: 307-721-6313

-or-

Go to [ehdi.health.wyo.gov](http://ehdi.health.wyo.gov) and use the  
“Feedback to Wyoming EHDI staff regarding software issues” link

## EHDI Tracking Software “Bugs”/Problems Reporting Page

Please list any “bugs” or problems you encountered while using the EHDI Software:  
Please be as detailed as possible, i.e., write down exactly what you were trying to do  
when you encountered the problem, steps you took to get there, etc.

1. \_\_\_\_\_  
\_\_\_\_\_  
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5. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Report problem(s) to the Wyoming Department of Health Help Desk 307-777-5940

-or-

Please return this completed page to the Wyoming EHDI Program:

Mail to: 715 Shield Street · Laramie, WY 82072

-or-

Fax to: 307-721-6313

-or-

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