



Listening and Spoken Language for Children with Hearing Loss VOICE Auditory-Verbal Approach Position Paper May 2011

VOICE for Hearing-Impaired Children (VOICE) supports listening and spoken language development for children identified with permanent hearing loss. This position is consistent with the VOICE Mission “To ensure that all children with hearing loss have their rights upheld with access to services for developing their abilities to learn to HEAR, LISTEN and SPEAK.

Internationally, most people communicate through listening, speaking and writing. More than 90 percent of children with hearing loss have hearing parents (Mitchell & Karchmer, 2004). VOICE supports the premise that a child, regardless of hearing ability, is born into the linguistic culture of the family (e.g. English, French, or other familial first language) and that families naturally provide their young children with fluent spoken language models (McConkey-Robbins 2007). The evolution of hearing technology (hearing aids, cochlear implants and FM systems) has made the acquisition of spoken language achievable for the majority of children born with hearing loss. Auditory-verbal intervention, which has been adopted by VOICE, is an appropriate natural choice as it capitalizes on technology and supports the development of the child’s spoken language through listening and communication in the family’s primary language. The overall goal of auditory-verbal practice is to guide parents so that they can foster listening and spoken language, thereby enabling their child to participate fully in typical learning and social environments.

VOICE supports a parent’s right to choose the communication option for their child. VOICE provides auditory-verbal (AV) intervention and actively engages in advocacy to promote listening and spoken language development to support parental choice for listening and spoken language.

Auditory-Verbal practice is diagnostic and encourages the maximum use of hearing in order to promote language acquisition as naturally as possible through listening. There is a consensus among researchers (Dornan, Hickson, Mursoch, Houston, & Constantinescu, 2010; Moog & Geers, 2003; Rhoades & Chisolm, 2001) that development of the auditory neural connections requires extensive auditory experience to provide the young child with hearing loss with sufficient exposure to speech patterns. Auditory-verbal intervention places an emphasis on listening during focused therapy sessions to enable the child to become a skilled listener. Consequently, in the more difficult auditory conditions of everyday life the child will be better equipped to make optimal use of auditory cues in combination with natural visual cues to more fully participate in accessing spoken interaction.

The auditory-verbal approach is grounded in a model that requires parental involvement throughout the child's daily activities during the pre-school and school years. There is an increasing awareness of the importance of parents in the child's rehabilitation program. Studies have shown that parent engagement has an impact on language development (DesJardin, 2006; Moeller, 2000) and overall progress (Kaiser & Hancock, 2003). In Auditory-Verbal practice, parents and caregivers are supported in their role as the child's most important teacher of language. Parents and caregivers actively participate in therapy and learn how to transfer language targets to everyday environments. Ultimately, parents and caregivers gain confidence that their child can have access to a full range of academic, social, and occupational choices throughout life.

Evidence for spoken language, literacy, and social development outcomes

There is good evidence from studies around the world that early auditory-focused intervention allows many children with hearing loss to achieve spoken language aligned with the typical levels for children who have normal hearing (Dornan, et al., 2010; Geers, Tobey, Moog, & Brenner, 2008; Nicholas & Geers, 2007; Fitzpatrick, Durieux-Smith, Eriks-Brophy, Olds, & Gaines, 2007; Rhoades & Chisolm, 2001).

Studies on school-age children with hearing loss who learn an auditory-verbal/oral language have superior outcomes in literacy scores compared to children who use visual/manual languages. (Dillon & Pisoni 2004; Geers, 2002; Geers, et al., 2008; Kaderavek, & Pakulski, 2007).

Many children with hearing loss can achieve literacy skills within the average range for hearing peers (Geers & Hayes, 2011; Robertson, 2009). There is emerging evidence from the cochlear implant literature that strong oral language skills contribute to literacy success (Geers & Hayes, 2011).

VOICE advocates that parents be provided with information based on the best available evidence to make an informed decision about communication development for their children.

Informed parental choice is critical. Many parents may initially be confused and at times overwhelmed by the communication possibilities for their child with hearing loss. Communication options need to be considered in the context of many factors, including language fluency, availability of technology, future education prospects, and factors intrinsic to the global developmental needs of the child. Parents need to know that rehabilitation and educational choices can be adjusted based on the changing needs of their child. By providing evidence-based information that outlines the potential outcomes of each approach, professionals provide families with useful information to make the important decision which is best suited to their family and child.

Rationale supporting a listening and spoken language approach

Early Auditory Experience

The “critical period” for speech and language development in children ranges from before birth to 6 years old. This “critical period” refers to a stage of intense brain development in babies and young children during which their brains are using input from their senses to organize their perception of the world around them. Spoken language is based on listening; therefore it is vital that children with hearing loss receive clear, complete, and consistent sound during these first years of life. This helps their brains to form the neuro-networks that will allow the child to develop the ability to understand spoken language and the ability to speak fluently. When a child with a hearing loss does not receive access to sound during the critical language-learning years, their ability to meaningfully recognize and process sound deteriorates over time, making it more difficult for the brain to meaningfully interpret sound. The world around us sends messages to the brain through the ears. For children with hearing loss, this process must be nurtured and stimulated. Failing to provide early and appropriate access to sound has been described as a neuro-developmental crisis (Flexer & Mandell, 2008). The incorporation of hearing technology and early intervention with spoken language instruction is the key to developing the ability to talk. Equally important is the coordination of the family members and professionals in working together to help children learn to process and produce sound.

Early auditory access

- Children with normal hearing typically develop spoken language through auditory pathways. Research shows that babies are responding to sound even before birth and rapidly develop the ability to differentiate and fine-tune auditory sound patterns (Vouloumanos, Hauser, Werker, & Martin, 2009; Werker & Tees, 2005).
- Infants with normal hearing naturally show a preference for auditory information. The auditory system begins to respond to sound at 12 weeks gestation, whereas it takes the visual system up to six months after birth to reach the same levels. Infants with hearing loss, who have access to sound by age six months, can develop hearing and visual systems in synchrony with each other like children with normal hearing. Recent research has shown that children with normal and impaired hearing show a similar preference for auditory information (Zupan & Sussman, 2009).
- There is evidence from neuro-developmental research that there are critical periods for optimal auditory development (Gordon & Harrison, 2005; Sharma, Dorman, & Kral, 2005; Sharma, Dorman, & Spahr, 2002).
- There is increasing evidence that listening is an important foundation of both spoken language development and literacy skills. Literacy is highly dependent on phonological processing abilities which involve segmenting sounds in words. Accordingly, the development of listening skills promotes strong literacy foundations (Robertson, 2009).

- Research demonstrates that a child's ability to understand the connection between sounds of spoken words and print/ letters, is essential to reading and writing (Robertson, 2009).
- Early identification of hearing loss coupled with current hearing technology through acoustic amplification and cochlear implants now provide children with hearing loss with the opportunity to access speech information through the auditory pathways (ASHA; Dornan, et al., 2010; Eriks-Brophy, 2004; Nicholas & Geers, 2007).

Factors impacting spoken language and literacy outcomes

Factors related to differences in spoken communication abilities include age at identification of hearing loss (Kennedy et al., 2006; Yoshinaga-Itano, 2003); severity of hearing loss (Fitzpatrick et al. 2007; Sininger, Grimes, & Christensen, 2010), early use of amplification and/or age at cochlear implantation (for children with severe to profound deafness) (Nicholas & Geers, 2007; Niparko et al., 2010).

These factors have emerged as important predictors of spoken language outcomes.

Communication Mode

- Communication mode has been shown to be associated with speech and language outcomes of children with cochlear implants. Children exposed to spoken language have a greater probability of scoring higher on speech and language assessments than children exposed to some degree of either sign support or sign language. (Percy-Smith, Jensen, Cayé-Thomasen, Thomsen, Gudman, & Lopez, 2008)
- Children receiving auditory-based intervention score the highest on speech production and speech recognition measures. These results improve as the emphasis on audition increases. (Wie, Falkenberg, Tyete, Tomblin, 2007)
- Recent data indicate that introducing sign language prior to cochlear implantation does not enhance outcomes compared to emphasis on spoken language alone. (Nittrouer, 2009). Some studies have shown the use of sign language in early childhood to be associated with lower scores at adolescence in some aspects of spoken language and literacy (Geers, Strube, Tobey, Pisoni, & Moog, 2011),
- Recent data suggest that sign language may interfere with spoken language in children identified after one year of age (Nittrouer, 2009).
- Overall, there is no evidence to suggest that the use of sign language in early childhood promotes spoken language development. (Johnston, Durieux-Smith & Bloom, 2005).
- Enhanced speech, spoken language and auditory outcomes are associated with greater emphasis on spoken language. Since 1992, over 90% of children with profound hearing loss have developed intelligible spoken language. (Yoshinaga-Itano, C., Johnson, C., Carpenter, K., & Brown, A, 2008)
- Children using a listening and spoken language approach have been shown to have better speech production, speech recognition, expressive language,

complexity of utterances and syntax and narrative ability than children using a total communication approach. (Moog & Geers, 2003)

- Children with hearing loss who developed spoken language through listening developed reading abilities comparable to their peers with normal hearing. (Robertson & Flexer, 1993)

Educational Setting

- Oral communication performance of children with cochlear implants is not only influenced by the mode of communication used educationally but also the educational setting. (Toby, Geers, Brenner, Altuna, Gabbert, 2003)
- Children enrolled in a program focused on listening and spoken language showed an average of one year of language growth for each year in the program. At the end of a four-year period, the gap between chronological age and language age was nonexistent. (Rhoades & Chisolm, 2001)
- Children with cochlear implants who are in programs emphasizing listening and talking have higher speech production scores than children in programs that put less emphasis on these actions. (Toby et al., 2003)
- A large study on school-age children in the United States reported that all performance outcome measures were significantly higher for cochlear implanted children in educational environments emphasizing listening and speaking than in environments using visual-based approaches. These findings represent the most compelling support for an oral emphasis educational environment to be found in the pediatric cochlear implant literature. (Moog & Geers, 2003)

VOICE supports access to appropriate services provided through qualified professionals.

Children with hearing loss and their families require access to professionals with specialized education, training and accreditation in the language and communication method chosen by the parents for their child.

All VOICE therapists are Listening and Spoken Language Specialists (LSLS), certified Auditory-Verbal Therapists or Auditory-Verbal Educators. Auditory-Verbal practice must be conducted in adherence to all 10 LSLS Principles of Auditory-Verbal Therapy and Auditory Verbal Education as well as the Principles of Professional Behavior and Code of Conduct set out by the AG Bell Academy International Certification Program for Listening and Spoken Language Specialists. (www.agbellacademy.org) see appendix.

As outlined by the AGBell Academy, VOICE therapists honour their responsibility to make fully available to all children with hearing loss those aspects of auditory-verbal, educational, and audiologic-(re)habilitative practices that encourage habitual and maximal use of hearing technology, and are known to have positive effects on the development of spoken communication. (Professional Code, AGBell Academy, 2007)

Listening and Spoken Language Professionals utilizing an Auditory-Verbal Approach:

- Support programs for the early detection and identification of hearing impairment and the auditory management of infants, toddlers and children so identified.
- Seek to provide the earliest possible use of the most appropriate technology in order that their clients obtain the maximum auditory benefits possible.
- Seek to instruct primary caregivers in ways to provide optimal acoustic stimulation within meaningful contexts and support the development of the most favourable auditory learning environments for the acquisition of spoken language.
- Seek to integrate listening into the child's total personality.
- View communication as a social act and seek to improve verbal (spoken) interaction within the typical social dyad of infant/child and primary care-giver(s), with the provision that one-to-one teaching is critical to communication development.
- Work to ensure that the child's emerging speech will be self-monitored through audition to the greatest possible extent.
- Strive to use natural sequential patterns of auditory, perceptual, linguistic and cognitive stimulation to encourage the emergence of listening, speech and language abilities.
- Make ongoing evaluation and prognosis of the development of listening skills an integral part of the (re)habilitative process.
- Endeavour to mainstream/integrate children who are deaf or hard of hearing into regular education classes with appropriate support services to the fullest extent possible, with appropriate consent from a child's parent(s)/guardian(s).
- Adhere to principles established for their certification.

Conclusion

Based on the available evidence, VOICE supports a listening and spoken language approach for newly identified children whose parents choose a spoken language option. VOICE provides an auditory-verbal intervention program, a diagnostic approach that provides maximal auditory stimulation to develop the child's auditory pathways during the critical learning period. The auditory-verbal approach requires parental engagement throughout the child's pre-school and school years. In order to provide families with the highest level of service, VOICE also supports service provision by professionals who have attained certification as Listening and Spoken Language Specialists (LSLS) - Auditory-Verbal therapists (AVT) or educators (AVEd) or are engaged in mentored-training leading towards certification. The overall goal of this approach is to enable children to participate fully in typical learning and social environments. VOICE continues to recommend that families have access to evidence-based information as it becomes available in order to make an informed decision about care for their children with hearing loss.

Appendix

PRINCIPLES OF LSLS AUDITORY-VERBAL EDUCATION (LSLS Cert. AVEd)

A Listening and Spoken Language Educator (LSLS Cert. AVEd) teaches children with hearing loss to listen and talk exclusively through listening and spoken language instruction.

1. Promote early diagnosis of hearing loss in infants, toddlers, and young children, followed by immediate audiologic assessment and use of appropriate state of the art hearing technology to ensure maximum benefits of auditory stimulation.
2. Promote immediate audiologic management and spoken language instruction for children to develop listening and spoken language skills.
3. Create and maintain acoustically controlled environments that support listening and talking for the acquisition of spoken language throughout the child's daily activities.
4. Guide and coach parents to become effective facilitators of their child's listening and spoken language development in all aspects of the child's life.
5. Provide effective teaching with families and children in settings such as homes, classrooms, therapy rooms, hospitals, or clinics.
6. Provide focused and individualized instruction to the child through lesson plans and classroom activities while maximizing listening and spoken language.
7. Collaborate with parents and professionals to develop goals, objectives, and strategies for achieving the natural developmental patterns of audition, speech, language, cognition, and communication.
8. Promote each child's ability to self-monitor spoken language through listening.
9. Use diagnostic assessments to develop individualized objectives, to monitor progress, and to evaluate the effectiveness of the teaching activities.
10. Promote education in regular classrooms with peers who have typical hearing, as early as possible, when the child has the skills to do so successfully.

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Principles of LSLS Auditory-Verbal Therapy (LSLS Cert. AVT[®])

1. Promote early diagnosis of hearing loss in newborns, infants, toddlers, and young children, followed by immediate audiologic management and Auditory-Verbal therapy.
2. Recommend immediate assessment and use of appropriate, state-of-the-art hearing technology to obtain maximum benefits of auditory stimulation.
3. Guide and coach parents¹ to help their child use hearing as the primary sensory modality in developing spoken language.
4. Guide and coach parents¹ to become the primary facilitators of their child's listening and spoken language development through active consistent participation in individualized Auditory-Verbal therapy.
5. Guide and coach parents¹ to create environments that support listening for the acquisition of spoken language throughout the child's daily activities.
6. Guide and coach parents¹ to help their child integrate listening and spoken language into all aspects of the child's life.
7. Guide and coach parents¹ to use natural developmental patterns of audition, speech, language, cognition, and communication.
8. Guide and coach parents¹ to help their child self-monitor spoken language through listening.
9. Administer ongoing formal and informal diagnostic assessments to develop individualized Auditory-Verbal treatment plans, to monitor progress and to evaluate the effectiveness of the plans for the child and family.
10. Promote education in regular schools with peers who have typical hearing and with appropriate services from early childhood onwards.

An Auditory-Verbal Practice requires all 10 principles.

Adapted from the Principles originally developed by Doreen Pollack, 1970

Adopted by the AG Bell Academy for Listening and Spoken Language[®], July 26, 2007.

¹ The term "parents" also includes grandparents, relatives, guardians and any caregivers who interact with the child.

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