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Early Intervention Network: Evidence Summary

Factor 2: A collaborative, ongoing process should be used to explore modalities, technologies, and strategies to support the development of linguistic competence.

Annotated Evidence:

- Calderon, R., & Greenberg, M. (1997). The effectiveness of early intervention for deaf children and children with hearing loss. In M. J. Guralnick (Ed.), *The effectiveness of early intervention* (pp. 455-482). Baltimore: Paul H. Brookes Publishing Co.

This evidence discusses the diverse needs of deaf and hard of hearing children. It reviews research of outcomes of early intervention programs, and how different factors (i.e., family, program, and individual) impact development. The authors suggest a need for modern early intervention to consider the factors that impact a child and design research to better understand those factors.

- Hafer, J. C., & Stredler-Brown, A. (2003). Family-centered developmental assessment. In B. Bodner-Johnson & M. Sass-Lehrer (Eds.), *The young deaf or hard of hearing child: A family-centered approach to early education* (pp. 127-149). Baltimore: Paul H. Brookes Publishing Co.

Chapter five provides parent-friendly answers to common questions raised for newly diagnosed children, such as “what’s wrong with my child?” “what will my child be like later?” and “what can be done to help my child?”. The chapter also describes development and implementation of two assessment models from the Colorado Home Intervention Program: the Developmental Assessment Process for Deaf Children (DAP-D) and the FAMILY Assessment.

- Harris, M. (2010). Early communication in sign and speech. In M. Marschark & P. E. Spencer (Eds.), *Oxford handbook of deaf studies, language, and education* (pp. 316-330). New York: Oxford University Press.

This article discusses different characteristics of successful communication strategies between deaf children and hearing children. The article can be separated into four sections: 1) common origins of languages communication, 2) review of development of ASL, 3) review of the development of spoken language, and 4) practical application to areas such as specific language impairments in deaf children, the impact of newborn hearing screening, and early cochlear implantation on development of language.

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- Joint Committee on Infant Hearing (JCIH). (April, 2013). Supplement to the JCIH 2007 Position Statement: Principles and guidelines for early intervention following confirmation that a child is deaf or hard of hearing. *PEDIATRICS*, 131(4). Available from: <http://pediatrics.aappublications.org/content/early/2013/03/18/peds.2013-0008.full.pdf+html>

This document provides comprehensive practice guidelines for early hearing detection and intervention (EHDI) programs on establishing strong early intervention (EI) systems to meet the needs of children who are deaf or hard of hearing. It stresses the importance of prompt, individualized, targeted and high quality intervention utilizing service providers with optimal knowledge and skill levels. The document provides 12 practice goals and other associated guidelines and benchmarks for EI systems and programs.

- Moeller, M. P., & Condon, D. (1994). Diagnostic Early Intervention Program (DEIP). A collaborative problem-solving approach to early intervention. In J. Roush & N. Matkin (Eds.), *Infants and toddlers with hearing loss: Family-centered assessment and intervention* (pp. 163-192). Baltimore: York Press.

Chapter nine identifies four elements critical in the early intervention process: 1) individualized and evidence-based interventions for each child, 2) utilizing an ecological viewpoint that encompasses the child's family system, 3) opportunities for parents to establish balanced partnerships with professionals, and 4) child development is dynamic and multidimensional requiring a comprehensive evaluation of the needs for both the child and family, based on the results of Boys Town National Research Hospital's (DEIP, 1994).

- Spencer, P. E., & Marschark, M. (2010). *Evidence-based practice in educating deaf and hard-of-hearing students*. New York: Oxford University Press.

Chapter five reviews the rate and course of language development for deaf children across auditory-oral methods, cued speech, and visual-manual methods (e.g., sign language). Evidence suggests that language delays result from a lack of a fluent accessible language model. Children, without cochlear implants or early intervention, educated in programs with an emphasis on oral instruction, had language delays and poorer fluency. Children who used cued speech had better phonological development. Children exposed to fluent sign language models from birth and educated in such environments developed language equally and as effectively as those children without hearing loss.

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- Spencer, P. E., & Marschark, M. (2010). *Evidence-based practice in educating deaf and hard-of-hearing students*. New York: Oxford University Press.

Chapter 11 recognizes that there is no one-approach solution to address language development, or reading intervention that applies to all deaf and hard of hearing children. Reviews showed: 1) that when a child has sufficient auditory access they can develop spoken language if intensive use of and instruction in spoken language occurs; 2) total communication methods do not provide full access to either spoken or visual language, one language is always significantly more represented; 3) acquisition of sign language can only occur if the child has access to a fluent visual language model; and 4) the use of signs or cues to disambiguate spoken language has never been shown to interfere with the acquisition of a spoken language. The chapter recognizes that technology has advanced the ability of a deaf child to access to spoken language, which in turn has resulted in children's own spoken language achievements. American Sign Language was found to support learning spoken language if spoken language was utilized.

- Stredler-Brown, A. (2010). Communication choices and outcomes during the early years: An assessment and evidence-based approach. In M. Marschark & P. E. Spencer (Eds.), *Oxford handbook of deaf studies, language, and education* (pp. 292-315). New York: Oxford University Press.

The numerous communication choices that parents have to use with their deaf child (e.g., pidgin signed English, sign-supported speech and language, and oral methods) are reviewed. The article calls for the need to consider evidence-based practice and assessments, to guide parental selection of language modality and communication style, avoiding the biases of the professional opinion. Results also suggest that parents will often change the method of communication for their child.

- Young, A.M., Carr, G., Hunt, R., McCracken, W., Skipp, A., Tattersall, H. (2006). Informed choice and deaf children – underpinning concepts and enduring concerns. *Journal of Deaf Studies and Deaf Education*, (11), 322-336. Available from: <http://jdsde.oxfordjournals.org/content/11/3/322.full.pdf+html>.

This article discusses and establishes several guidelines for policy change related to “informed choice” of parents with children who are deaf or hard of hearing. The article discusses how most parents are not fully aware of the range of choices available in supporting their deaf or hard of hearing child's linguistic and social development. In whole, this article reviews the first steps in a project decided to produce parental and professional guidelines on the promotion of informed choice.

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- Yoshinaga-Itano, C. (2006). Early identification, communication modality, and the development of speech and spoken language skills: Patterns and considerations. In P. Spencer & M. Marschark (Eds.), *Advances in the spoken language development of deaf and hard-of-hearing children* (pp. 298-327). New York: Oxford University Press.

This study included children with hearing loss from the Colorado Home Intervention Program, and reviewed the correlation between speech production and level of early hearing loss (1994-2004). Children fitted with conventional hearing aids (with hearing loss in the middle to severe range), and who had early intervention tended to develop intelligible speech by kindergarten. Children with less than eight consonants by 36 months of age showed low probabilities of developing intelligible speech by 6 years of age, regardless of degree of hearing loss. Children in auditory stimulation programs were found to have the same outcomes as those with conventional amplification who may not have been in those programs. Three different case studies are provided suggesting that having a visual language foundation facilitated later spoken language development.

- Yoshinaga-Itano, C. (2010) The Colorado journey towards optimal outcomes for children with hearing loss. Perspectives on hearing and hearing disorders in childhood. American Speech-Language-Hearing Association.

This article describes the development of system pathways designed to assure quality outcomes related to screening, confirmation that a child is deaf or hard of hearing, amplification fitting, enrollment in early intervention services, progress monitoring, and assurance that services are appropriate for each individual child and family. It discusses integral components of quality early intervention including care/service coordination, parent partnerships, connections with individuals who are deaf or hard of hearing, qualified early intervention providers, family involvement in assessment, attention to special populations (i.e. non-English speaking, unilateral hearing loss, auditory neuropathy spectrum disorder). Language outcomes of children in their program are shared.

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