An Examination of American Pediatric Policy on Language for Deaf and Hard of Hearing Children\textsuperscript{1}

Sarah Bristow

Abstract

When natural language input is not accessible to a child during the critical period for language acquisition, linguistic deprivation can occur. This can result in numerous negative effects on the child, including an inability to use any language at the level of a native speaker and subsequent social and emotional deficits and decreased abilities in other cognitive areas. Many children who are deaf or hard of hearing cannot adequately access spoken language for their cognitive needs to be met during the critical period. A sign language, however, can provide accessible natural language input and allow a deaf or hard of hearing child to avoid linguistic deprivation, and should therefore be considered medically necessary for members of this population. This thesis seeks to examine the treatment of language options for deaf and hard of hearing children in pediatric public policies set forth by the American Academy of Pediatrics (AAP). While the AAP does emphasize the importance of linguistic abilities for deaf and hard of hearing children, their policies do not adequately present the possible consequences of linguistic deprivation in a speech-only environment, implying that language options are purely a parental choice that will have no detrimental effects on the child’s development.

1 Introduction

In language acquisition, an essential concept is that of the critical period for language development. This is the period of time from birth to mid-childhood during which a child naturally acquires language using input from the ambient language. For children born deaf\textsuperscript{2} or hard of hearing, however, this acquisition process is disrupted by the inaccessibility of the ambient spoken language. This lack of sufficient linguistic input can result in language deprivation and subsequent delays in cognitive development that are often irreversible.

\textsuperscript{1} Thank you to Nathan Sanders, for his invaluable advising, to Donna Jo Napoli, for the suggestion of this topic and her continual support and encouragement, and to the friends I made at Gallaudet University this year who helped me realize the true importance of American Sign Language.

\textsuperscript{2} When discussing deafness and the Deaf community, a distinction is usually made between “deaf” and “Deaf”. The lowercase form “deaf” refers to anyone with a medical diagnosis of deafness, regardless of their linguistic or cultural choices and identification. The capitalized form “Deaf” refers specifically to individuals who identify as members of the Deaf community and use a sign language as their primary language of communication. In this thesis, I have chosen to use “deaf” in most instances as my research is focused on the medical definition and implications surrounding it in that context.
For all purposes, but especially for language acquisition, sign languages are bona fide natural languages. They simply occur in a different modality from spoken languages. This modality is much more accessible to children with hearing loss, and can provide the essential linguistic input these children may not get elsewhere. Therefore, it is important that parents and professionals know that sign language is necessary for certain children, and that the absence of it could result in permanent developmental deficits. The purpose of this thesis is to evaluate the pediatric medical policies set forth by the American Academy of Pediatrics (AAP) that address the issue of language choices for deaf and hard of hearing children. Ideally, these policies should make it clear that a speech-only environment is not developmentally appropriate for deaf and hard of hearing children. They should make sure that both pediatricians and parents know that consequences exist to a speech-only environment, what those consequences are, and for whom they are possible, so that an informed decision can be made in the best interest of the child.

I first outline the historical context of the current opinions and standards regarding the use of a sign language, followed by the scientific basis for the argument that sign language is necessary for deaf and hard of hearing children to ensure proper cognitive development. I then briefly describe early intervention standards, and use all of the preceding information to outline the details of what I would hope to see in an ideal policy. Next, I look at the small body of policies made available by the AAP that outline best practice guidelines in any area that could affect language acquisition by deaf or hard of hearing children, including hearing screening and early intervention guidelines, cochlear implantation, and otitis media. Not only are there very few actual policies available regarding the matter, those that exist present the use of speech-only as a choice with no consequences. This is an inaccurate representation of the linguistic and developmental situation and could result in the linguistic deprivation of certain children.
1.1 A brief history of sign language use in the United States

The seeds of current attitudes toward sign language use in America can be seen in the patterns of its perception in the past. While there was undoubtedly previous use of home or local signing systems, the first systematic use of a sign language in America was in the early 1800s, with the development of American Sign Language (ASL). Laurent Clerc, a deaf academic and educator of the deaf from Europe, came to the United States with Thomas Hopkins Gallaudet and founded the first residential school for the deaf (Gallaudet 2013). Initially, residential schools that maintained a manualist curriculum were the standard (Baynton 1996). Manualism is the belief that a manual, signed language is the natural language of a deaf individual, and that education for the deaf should therefore be conducted in a sign language. Soon after, however, the Milan conference changed the standards regarding language in deaf education, resulting in a shift in perception of ASL.

At the Milan conference, men considered to be leaders in the field of deaf education at the time met and passed several resolutions in support of oralism, or the use of entirely spoken language in the education of the deaf. An oralist philosophy promotes the use of spoken language through therapy to help deaf individuals learn to vocalize and to read the lips of hearing individuals around them, as opposed to using any type of sign language. Their resolutions presented this as the only viable option for successful education, saying:

(1) given the incontestable superiority of speech over signs in restoring deaf-mutes to society, and in giving them a more perfect knowledge of language that the oral method ought to be preferred to signs

(2) considering that the simultaneous use of speech and signs has the disadvantage of injuring speech, lipreading, and precision of ideas, that the pure oral method ought to be preferred. (from Moores 2010)
According to Moores, there were no deaf individuals present at this congress. In spite of this, these resolutions set the tone and standard for the treatment of language in the deaf classroom for years to come, signaling (inaccurately) to the general public that sign languages were inferior to spoken languages. The survival of strictly oral programs of education for the deaf confirms the continued existence of this opinion among at least some individuals. The impression that allowing a child to sign will preclude his or her ability to learn a spoken language prevails, although there now exists a range of program options available to deaf children and their families.

It was not until William C. Stokoe’s work in the 1960s that the general perception of sign languages began to change. Up to that point, sign languages were viewed as perhaps loose systems of gestures, or pantomime. Stokoe’s work made it clear that sign languages do, in fact, follow the same parameters as spoken languages, just in a different modality. Sign languages exhibit distinct and consistent syntactic structures, as well as phonetic and phonological systems (using the hands and various parts of the body within the signing space as articulators) and consistent semantics. Sign languages are also acquired natively in the same manner as spoken languages, show distinct dialects, and change over time. Due to these shared properties, sign languages are bona fide natural languages on par with spoken languages.

Not long after Stokoe’s work in the 1960s, schools in the U.S. were first required to provide their deaf students with accessibility accommodations. Until the Education for All Handicapped Children Act of 1975, public schools were not required to provide their deaf students with any form of assistive services to ensure their success. This includes assistive listening technology, sign language interpreters, and educational monitoring and intervention. While there has been a recent push to guarantee that language accessibility is a right for all deaf
and hard of hearing individuals, the current standard for deaf education is a choice between private signing programs, oral programs, or mainstreaming into the general public school system.

Although advances have been made since the days of strict oralism, with sign language use no longer being officially discredited by schools and speech therapists, the history of educational and cultural attitudes still seems to have an effect on the treatment of language decisions for deaf children. Although sign language is the most, and sometimes only, effective modality of language for many children born deaf or hard of hearing, medical literature still presents the use of a spoken language alone versus a bilingual or signing approach as a viable choice for the parents with no adverse consequences for the child’s development.

1.2 The case for signed language

1.2.1 Who needs sign language input during the critical period?

Sign language input is necessary to avoid linguistic deprivation for any child for whom spoken language is inaccessible due to hearing loss. According to the National Institute on Deafness and Other Communication Disorders (NIDCD), approximately 2 to 3 out of every 1000 children born in the United States is deaf or hard of hearing. Hearing loss is one of the most prevalent birth defects worldwide and can occur along a spectrum.

According to the Centers for Disease Control and Prevention (CDC), there are four different types of hearing loss. Conductive hearing loss is caused by a problem located in the outer or middle ear, where something prevents sound waves from being transferred past that point. Sensorineural hearing loss occurs when some aspect of the inner ear or auditory nerve is not functioning normally. One can also experience mixed hearing loss, which combines sensorineural elements and conductive elements. A final type of hearing loss is auditory neuropathy, which occurs when sound waves enter the ear normally, but some damage or defect
renders the resulting neural signal unintelligible. This is different from sensorineural hearing loss in that a signal is still able to be received, but it cannot be interpreted and perceived.

All types of hearing loss can occur at different levels. According to the CDC, an individual can be classified as having mild, moderate, severe, or profound hearing loss, depending on the decibel and frequency levels the individual can perceive. Most deaf individuals still have some level of residual hearing, however, it can only be magnified to the person’s benefit in some of those cases. Any level of hearing loss can result in a disruption or distortion in the perception of auditory speech, which can lead to language deprivation and disorders. To avoid such problems, children must be provided with access to an unaltered natural language. A sign language, being visual as opposed to auditory, would not be disrupted in the same way as a spoken language, and would allow for normal language acquisition. Therefore, it is critical that deaf and hard of hearing children have access to a sign language, so that they are ensured accessible, unaltered natural language input.

1.2.2 Language acquisition and the critical period hypothesis

In normally developing children without hearing loss, language acquisition occurs naturally through the input of an ambient language spoken by their caretakers and other people in their environments (Lenneberg 1967). The children do not deliberately learn how to speak their native language, nor do they need direct instruction. However, if, as in the case of deaf children, the ambient spoken language is inaccessible in some way, language development can be disrupted. This can result in delayed communicative skills or language deprivation, causing a range of problems for an individual, both immediately and later in life (Kushalnagar et al. 2010). Communicative skills will be delayed or disordered, and the individual may never have the skills of a native speaker in any language. Furthermore, the cognitive abilities related to language use
will not properly develop, resulting also in disabilities in areas like mathematics and often low self-esteem and poor social/emotional development. The reason that these negative effects of linguistic deprivation occur and persist after a certain age can be explained by the critical period hypothesis.

The critical period for language development refers to Lenneberg’s (1967) hypothesis that, due largely to synaptic pruning from the moment of birth, there is a cognitive time limit placed on the ability to acquire a language with native proficiency, around five to seven years from birth. This especially affects the cognitive basis for grammar and language structure and the development of left hemisphere language structures. This hypothesis has been supported by a number of studies, most notably those regarding children from atypical situations in which language input was denied during this time period. One such case is that of Genie, a child rescued from an abusive home at the age of 13. She spent her critical period isolated from people, and therefore, from any sort of language input (Curtiss et al. 1974). Cognitive testing revealed that all of the language abilities that she did learn at a delayed rate through explicit teaching were managed by the right hemisphere, and that healthy development of the left hemisphere structures necessary for typical language use was absent. Her language abilities plateaued after only a few years, with her skills in certain crucial aspects of grammar and syntax still lacking (Curtiss et al. 1977).

1.2.3 The role of ASL and a bilingual environment

The viewpoint that a sign language input is a necessity for (at the very least) certain cases within the population of children who experience some form of hearing loss is shared by many linguists and educators of the deaf and hard of hearing (Kushalnagar et al. 2010; Humphries et al. 2012a, 2012b). There is much evidence to support the position that not only are sign languages bona fide languages, differing only in modality from spoken languages, but that sign language
acquisition is governed by the same principles as spoken language acquisition. For example, Mayberry and Eichen (1991) demonstrate the influence of a critical period on the language abilities of signers and confirm that deaf children exposed to English and not a sign language are at the risk of suffering language deficiencies. Petitto (2000) provides an overview of a significant amount of evidence for the critical period equivalence of sign languages. For example, Petitto describes evidence from hearing children in bimodal and signing-only environments (44). The children in bimodal homes, (homes that used both sign and spoken languages for everyday communication) reached all of the expected linguistic milestones at the same time in both languages. Additionally, they showed no preference for either modality on the whole. The hearing children who were exposed exclusively to a sign language also met all of the expected linguistic milestones on a schedule that mimicked that of hearing children learning a spoken language, indicating an equivalence between the two modalities.

It has also been well documented that competence in a first language contributes to the ability later in life to become literate, to manipulate numbers and mathematical calculations, and to participate in normal social interactions (Humphries et al. 2012a, 2012b). Many parents of deaf or hard of hearing children want their children to be able to understand, use, and read English, to ensure the ability to function efficiently in a majority hearing, English-speaking world. While it may seem logical that if English usage is the primary goal, one should start with as much English saturation as possible, the most important consideration is a strong cognitive basis in a first language. As previously demonstrated, this strong cognitive basis cannot be gained from spoken English alone by many deaf and hard of hearing children, resulting in linguistic deprivation and the inability to gain native proficiency in any language. A speech-only environment is therefore actually counter-productive toward a goal of fluency in English for
many deaf and hard of hearing children. This is by no means meant to suggest that a sign language should be the only source of language input for a deaf or hard of hearing child, or that parents should use a sign language instead of English altogether. The necessity is simply that sign language input be provided and emphasized for proper development. A bilingual environment, in which the child is exposed to both a sign language and English as much as possible, as well as other forms of interacting with language, like reading books together, will be the most advantageous for acquisition of English abilities.

It is important here to note that these guidelines also apply to children who have had corrective procedures. Humphries et al. (2012b) have made it very clear that a sign language is also necessary for the linguistic development of children with cochlear implants. While cochlear implants can help some individuals acquire the ability to process language in the auditory modality and to use spoken language, the success and failure rates of implants, as well as the length of time it can take the brain of an implanted child to learn how to use this new input, can allow language deprivation to still occur. Language input must constantly be provided, and sign language input is the only modality that can conquer the problems created by the linguistic drawbacks of cochlear implants.

1.3 Early Hearing Detection and Intervention

The policies examined in this thesis primarily deal with standards and specifications for early intervention programs. Early Hearing Detection and Intervention (EHDI) refers to the specialized set of procedures outlined to detect hearing loss as early as possible in a child’s life and provide appropriate linguistic and auditory therapies accordingly. The goal of an EHDI program is to ensure that the child in question is enabled to develop along as normal and successful a trajectory as possible through Early Intervention (EI) programs. EHDI standards and guidelines are
managed at the state level. In their documentation for EHDI guidelines, states define standards for hearing assessment, specifically to whom children should be referred for development of their Individualized Family Service Plan when hearing loss has been confirmed, how intervention can be funded through the state, and, most relevant to the current concerns, communication options and how they should be handled.

The National Center for Hearing Assessment and Management (NCHAM) at Utah State University has a database for the state guidelines for all fifty U.S. states regarding their hearing assessment procedures and requirements as well as EHDI and EI policies. Every state for whom information is available online expresses that there is a range of communication options available for children who are deaf or hard of hearing, including spoken English, ASL, cued speech, Signed Exact English and gesture. These options are presented without bias or suggestion, and also without indication of the possible consequences of certain choices. Many states describe the modality of communication as a set of equivalent options for parents to choose from. This is the same trend seen in the way national pediatric medical policy treats language and communication options for deaf and hard of hearing children.

1.4 The ideal policy
Given the importance of linguistic input during the critical period, an essential element of policies should be an emphasis on language accessibility, resulting in a focus on providing language of any accessible modality throughout as much of the critical period as possible. The first step would be to require both initial screenings at birth and appropriate follow-up screenings for all children. According to the American Speech-Language-Hearing Association, 47 out of the 50 states require hearing screenings of newborns at birth. Ideally, hearing screenings would be required for every child born in every state, as well as the appropriate specialized follow-up
screenings and interventions. This is an extremely important foundational element to a policy that successfully guarantees language to every child born deaf or hard of hearing. Hearing loss and cause or type must be identified as soon as possible to reduce the time a child is unable to access the language around them, and proper early intervention programs cannot be designed or implemented for a child until this information is known.

Past the screening process, the policies should provide a clear definition as to who should be considered for the child’s EHDI team. Besides the family members and the primary care physician or pediatrician, the EHDI team will vary depending on the child’s specific case and needs, but should likely include an audiologist, a speech pathologist or speech therapist, and an otolaryngologist as basics. More importantly, however, it should define the criteria for what constitutes proper sign language input, including expectations for signers that the family may reach out to.

It is also critically important that the policy state that a sign language is a necessity for many deaf and hard of hearing children to ensure appropriate development. At the very least, it should be explicit regarding the consequences that could result from a speech-only environment. Policies must provide parents with the ability to make an informed decision based not only on cultural linguistic preferences, but on the developmental implications of their options.

Finally, the policy should provide continual evaluation and follow up to ensure the effectiveness of the EI program and Individualized Family Service Plan that were decided on by the pediatrician and the parent. These evaluations should examine cognitive and linguistic abilities, not simply speech and vocalization abilities.

Additionally, it may be helpful to look internationally for models. The World Federation of the Deaf (WFD) is a non-governmental organization working to promote the human and civil
rights of all d/Deaf individuals. This includes setting standards for language and education, which other countries have used as a basis for their policies regarding language and hearing loss in children. For example, in Australia, an organization called Deaf Australia has set forth policy statements regarding many aspects of the use of Auslan, Australian sign language, and its policy on the education of deaf and hard of hearing children cites the WFD’s education guidelines. This policy emphasizes the necessity of bilingual education and immediate access to Auslan following a hearing loss diagnosis (Deaf Australia, Inc. 2010). It is interesting to note that policy in the United States does not take the priorities of the WFD into consideration on d/Deaf matters while other countries do.

2 Policies of the American Academy of Pediatrics (AAP)

The AAP is an organization founded in 1930 whose mission statement is “to attain optimal physical, mental, and social health and well-being for all infants, children, adolescents and young adults” (American Academy of Pediatrics 2013). In pursuit of this goal, they publish the journal Pediatrics, which contains research, policy statements, practice guidelines, and technical reports. Within all of these, only two directly pertain to early intervention standards for deaf and hard of hearing children.

2.1 The Joint Committee on Infant Hearing Year 2007 Position Statement: Principles and Guidelines for Early Hearing Detection and Intervention Programs

This is one of only two current policy documents available through the AAP regarding treatment and early intervention strategies for children born deaf or hard of hearing. It serves as a general basis for standards regarding screening procedures, early intervention strategies, monitoring of progress, and resource accessibility. (For the AAP’s complete summary of the goals, see Appendix A.) This 2007 position statement addresses the previously identified needs for
consistent screening of newborns for all types of deafness and hearing loss, including neurological causes that previously had been unable to be detected by standard procedures, monitoring procedures to ensure that developmental milestones are being properly met, and access to the appropriate resources. There remains, however, an insufficient identification of the necessity of a sign language for the development of many children who are deaf or hard of hearing. This is most clearly identified in the paragraph “Provision of Communication Options” on page 909 in the section entitled “Guidelines for EHDI Programs”:

Research studies thus far of early-identified infants with hearing loss have not found significant differences in the developmental outcomes by method of communication when measured at 3 years of age.† Therefore, a range of options should be offered to families in a nonbiased manner. In addition, there have been reports of children with successful outcomes for each of the different methods of communication. The choice is a dynamic process on a continuum, differs according to the individual needs of each family, and can be adjusted as necessary on the basis of a child's rate of progress in developing communication skills. Programs need to provide families with access to skilled and experienced early intervention professionals to facilitate communication and language development in the communication option chosen by the family.

The JCIH presents the use of sign language with deaf and hard of hearing children as always a matter of parental choice. It does not present the potential consequences of any of the options.

Interestingly, the JCIH cites research that appears to demonstrate that there is no difference in linguistic development between profoundly deaf infants whose ambient language and language of instruction is signed versus those whose language input is spoken. This is contradictory to much of the research previously cited (see Curtiss et al. 1974, Kushalnagar et al. 2010, Humphries et al. 2012a) and counterintuitive to anyone with a working knowledge of language acquisition. As stated clearly in the direct quote above, the children in these studies were only monitored until three years of age. In the previously discussed case of Genie, Curtiss and colleagues tested Genie periodically to monitor her progress. Genie’s language-deprived
state still allowed her to learn language abilities testing in the normal range for toddlers. This seems to indicate that significant language deficiencies can still exist after reaching the normal three-year-old milestones, and that testing only until that point does not sufficiently prove that profoundly deaf children exposed only to a spoken language will end up with normal language abilities. While it is true that usable language abilities can still be taught after this critical period, these abilities are incomplete at best. Sign language input during the critical period would alleviate these potential issues and allow children to follow a normal to above average developmental trajectory, including the ability by many to successfully learn spoken English later on.

2.2 JCIH 2013 Supplement to the Year 2007 Position Statement

In early 2013, the JCIH issued a supplement to their 2007 position statement that established more current standards for early intervention programs in terms of linguistic and cognitive development. In terms of the guidelines for an ideal policy, this supplement is an improvement over the first, but still lacking in some areas. This document is written only as a supplement to the 2007 position statement, not a full rewrite to be used in its place, so some of the areas addressed in 2007 were not readdressed. The need for universal screening is one such area, in that its inclusion in the original document meant that universal hearing screening was assumed to be background for the EHDI and EI provisions in this supplement. Therefore, there is no difference between the original 2007 statement’s adequacy in this area and that of the 2013 supplement.

A focus is definitely placed in the 2013 supplement on providing care and services in the most time-efficient manner to reduce the possibility of developmental deprivation. Goal 1 states that “All children who are [deaf/hard of hearing] and their families have access to timely and
coordinated entry into EI programs” (JCIH 2013: e1326), and defines timely entry as “referral… within 2 days of audiologic confirmation and implementation of services within 45 days of referral” (JCIH 2013: e1327). Goal 2 also states that first contact to the family by the service coordinator managing the child’s IFSP should be within 2 days (JCIH 2013: e1327).

Goal 2 also begins the process of clearly defining the important members of a child’s EI team and their qualifications. The ideal service provider is defined as having a wide range of previous experience and knowledge concerning deaf education, early childhood and infancy, language development for both spoken and signed modalities, and counseling for both the parents and families of a child born deaf or hard of hearing and the child’s own emotional and social development, as well as relevant technology and screening techniques (JCIH 2013: e1327-e1328). Goal 3 defines the “professional qualifications and core knowledge and skills” (JCIH 2013: e1328) necessary for a successful EI team, specifically in terms of language and linguistic development. Unfortunately, this is where the policy’s main shortcoming lies.

The same attitude as in the 2007 position statement is taken toward sign languages as part of the intervention strategy. Goal 3 has two subsections: 3a, which describes the standards of practice for EI team members whose purpose is to develop sign language proficiency and 3b, which describes standards for a team designed to develop listening and oral language skills. Goal 3a describes language use for deaf and hard of hearing children as a “spectrum of communication options” and says that the guidelines listed for early intervention staff are for “families who choose ASL” (Joint Committee on Infant Hearing 2013: e1329-e1330). While Goal 3b does address the importance of monitoring the effectiveness of augmentative hearing devices like hearing aids and cochlear implants throughout the EI program, in neither section is there any indication of the possible consequences of choosing a purely oral program if the
augmentative devices cannot or do not provide adequate access to auditory linguistic input. The combination of all of these elements could lead to the inaccurate impression that whether or not to offer a deaf or hard of hearing child a sign language is a choice with no negative consequences.

While Goal 3 presents the issues mentioned above, in 3a, it does provide a comprehensive explanation of who can and should be included in a child’s EI team to provide appropriate access to a sign language. Goal 3a explains the criteria for finding signing mentors and professionals, with a focus on fluency and the advantages of native signers. It also addresses the need for assuring access regardless of geographical location and abilities, such as access by computer and videophones.

The 2013 supplement also addresses follow-up monitoring procedures, as described in Section 1.5. In Goal 6, the JCIH sets the standard that, starting from birth, all deaf and hard of hearing children should be monitored at least every six months to ensure proper cognitive development, motor skills, and linguistic development.

The 2013 supplement does provide more of a focus on the importance of sign language in EI programs than the 2007 position statement. It is possible that the intent of the committee, by referring to a “spectrum of communication options”, was to acknowledge the fact that every case of hearing loss, just like every child, is unique. In the introduction to the policy, the JCIH stipulates that every EI program can and should be tailored to fit the exact need of each child. The level and type of hearing loss experienced by each child does affect her or his early intervention requirements, but the wording of the committee’s statements does not make explicit what types of cases require what types of interventions, or place sufficient emphasis on the need for unhindered access to linguistic input. Therefore, the primary care physicians of children for
whom a sign language may be the only viable language input method are being given the impression that any choice along the “spectrum” will be linguistically appropriate for their patients. This, as previously discussed, could have dire consequences for the overall well-being of the child.

2.3 Cochlear Implantation Policy

2.3.1 Background on cochlear implants.

According to the NIDCD, a cochlear implant is a device that electronically stimulates the auditory nerve, replacing the electrical signals that would have naturally occurred in a normally functioning auditory system. There is an external and an internal component of the device. Externally, there is a microphone that collects sound waves entering the ear. These waves are transformed into an electrical signal which is transmitted from the external transmitter to an internal receiver, and from there to the electrode array implanted directly into the patient’s cochlea. This can provide late-deafened adults with restored hearing, but its most controversial application is in the implantation of very young children.

As has been previously demonstrated, depriving a child of linguistic input for any significant period of time can be detrimental to his or her cognitive development. In the interest of providing auditory input as soon as possible during a child’s life, it is often considered medically appropriate to implant a child who is under one year old and a good candidate for hearing improvement. There are many practical and ethical concerns surrounding this decision, including the obvious potential consequences of invasive brain surgery at a young age, the risk of infection, and linguistic and cultural concerns. According to Lane and Bahan (1998), the Deaf Community sees the use of cochlear implants as a potential erasure of Deaf culture and language, as the ideal implantation strategy would seek to eradicate deafness as a medical condition,
necessarily reducing the number of deaf individuals. This combination of concerns can make the
decision to implant or not to implant their child very difficult for parents, but the linguistic
concerns that can follow successful implantation are significant.

Similar to the critical period for language development discussed previously, there exists
a period of sensitivity for the proper development of the auditory processing centers in the brain
(Sharma et al. 2009). Without auditory stimulation, as in the case of children born deaf or hard of
hearing, these systems will not develop along a normal trajectory. However, successful
implantation during this period of sensitivity can reverse the process and make it possible for an
implanted child’s brain to learn how to perceive sounds. This is a process that takes time,
however, and is not always successful. Some children may never gain the ability to successfully
perceive speech using their cochlear implant alone, while others may simply experience a gap as
the processes develop (Humphries et al. 2012a, 2012b). In either case, linguistic input must be
provided consistently to ensure proper cognitive and linguistic development, just as in the cases
of linguistic and auditory deprivation of an unimplanted deaf or hard of hearing child. Therefore,
policies regarding the treatment and care of children with cochlear implants must necessarily
consider language needs, as well as make clear to pediatricians and parents what the
consequences of not providing accessible language post-surgery could be. A sign language will
be the most accessible form of language for these children, and should be provided along with
spoken language input.

2.3.2 Treatment of cochlear implants by the AAP

There is only one policy statement available on the AAP’s database that specifically addresses
cochlear implantation in children, entitled “Cochlear Implants in Children: Surgical Site
Infections and Prevention and Treatment of Acute Otitis Media” (Rubin et al. 2010). This
statement is focused entirely on the physical aspects and side effects of implantation, including infections and complications at the site of the implant, and subsequent infections of the middle ear and meninges. This policy addresses issues of proper vaccination in preparation for treatment and appropriate medical treatments for conditions that could cause complications following the insertion of a cochlear implant, primarily bacterial meningitis and acute otitis media.

There is no mention in the policy statement of language use or recommendations for early intervention procedures following implantation. It is also significant to note that, in both the 2007 position statement by the JCIH and the 2013 supplement, children with cochlear implants are not treated as members of the population needing early intervention services. In the 2013 supplement, cochlear implants are mentioned simply as another example of augmentative hearing devices, and no consideration is given to the fact that language input may not be accessible by an implanted child for some time after the surgery (or ever, for some). This is a significant gap in the effort to provide all deaf and hard of hearing children with appropriate intervention services.

2.4 Otitis media policy

Otitis media and otitis media with effusion (OME) are infections of the middle ear. OME also includes the production and collection of fluid. These conditions can cause both temporary and permanent disruption in auditory abilities, so any policy or best practice statements regarding their treatment must necessarily address language to ensure total developmental health of an affected child. The AAP published a set of clinical practices guidelines regarding the treatment and management of OME, entitled simply “Otitis Media with Effusion” (American Academy of Family Physicians et al. 2004). The document does take linguistic development into account, recommending hearing screenings in persistent cases of OME. The document also contains one
section on pages 1416-1417 that explains the importance of identifying which children may be at risk for speech and language delays due to a combination of their pre-existing condition and their diagnosis of otitis media with effusion. Their recommendations for these children can be summed up in one paragraph from the section:

Management of the child with OME who is at increased risk for developmental delays should include hearing testing and speech and language evaluation and may include speech and language therapy concurrent with managing OME, hearing aids or other amplification devices for hearing loss independent of OME, tympanostomy tube insertion, and hearing testing after OME resolves to document improvement, because OME can mask a permanent underlying hearing loss and delay detection.

While early diagnosis of hearing loss is emphasized, there is no further mention of EI recommendations or language options and guidelines.

3 Discussion and conclusions

In terms of what is actually present in pediatric policies regarding deafness and language use, the prevailing theme is of unbiased choice. In both the 2007 position statement and its 2013 supplement, language options are treated as a flat matter of choice for the parents with no consequences defined. This, in fact, is the primary problem with such documentation. A speech-only environment, as previously discussed, is developmentally inappropriate for many deaf and hard of hearing children, but the wording of U.S. policy does not make this clear. This creates a situation in which primary care physicians may be unintentionally advising their patients and their parents to choose a setting that could result in permanent developmental deficits.

It is almost more telling of the state of deaf language in the United States what does not exist. The two policies examined here (one being the other’s predecessor, in fact) are the only ones within the database made available by the AAP to directly deal with the question of language use by deaf and hard of hearing children. Even policies regarding medical conditions
and situations that could cause deafness or even temporary hearing loss that could affect language acquisition either mention it sparingly or not at all. This seems to indicate a lack of urgency and importance placed on language acquisition and its biological implications.

This is exactly what the policies seem to be telling pediatricians and primary care physicians, and is definitely the message that comes across in other contexts like state EHDI standards. The overall message of the policies seems to be that language in general and successful communication are essential goals, but that the specific language itself is still a cultural consideration that should not be tainted by the professional’s bias.

Overall, the current state of affairs is misguided. The policies set forth by the AAP do not accurately portray how the ability of deaf and hard of hearing children to acquire language is affected by the modality of the language around them. The use of their standards by physicians could result in the linguistic deprivation of such children, and they should be revised to avoid harm.
Appendix A: Goals of the AAP’s 2007 Position Statement

1. All infants should have access to hearing screening using a physiologic measure at no later than 1 month of age.

2. All infants who do not pass the initial hearing screening and the subsequent rescreening should have appropriate audiological and medical evaluations to confirm the presence of hearing loss at no later than 3 months of age.

3. All infants with confirmed permanent hearing loss should receive early intervention services as soon as possible after diagnosis but at no later than 6 months of age. A simplified, single point of entry into an intervention system that is appropriate for children with hearing loss is optimal.

4. The EHDI system should be family centered with infant and family rights and privacy guaranteed through informed choice, shared decision-making, and parental consent in accordance with state and federal guidelines. Families should have access to information about all intervention and treatment options and counseling regarding hearing loss.

5. The child and family should have immediate access to high-quality technology including hearing aids, cochlear implants, and other assistive devices when appropriate.

6. All infants and children should be monitored for hearing loss in the medical home. Continued assessment of communication development should be provided by appropriate professionals to all children with or without risk indicators for hearing loss.

7. Appropriate interdisciplinary intervention programs for infants with hearing loss and their families should be provided by professionals who are knowledgeable about childhood hearing loss. Intervention programs should recognize and build on strengths, informed choices, traditions, and cultural beliefs of the families.

8. Information systems should be designed and implemented to interface with electronic health charts and should be used to measure outcomes and report the effectiveness of EHDI services at the patient, practice, community, state, and federal levels.


