

TOWARDS A NEW HEARING EQUIPMENT POLICY FOR THE BC EARLY HEARING PROGRAM

Prepared By:
Paige Muttersbach

Prepared For:
Ann Marie Newroth

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EXECUTIVE SUMMARY

In March 2005, the BC Early Hearing Program (BCEHP) was established to provide early detection and intervention services for infants and toddlers with hearing loss. In May 2009, the BCEHP Hearing Equipment Policy Working Group was established to review the BCEHP's present policy regarding the provision of hearing aids and FM equipment to eligible children with the goal of developing a policy to assist the BCEHP, audiologist, and families in achieving the best development outcomes possible for children diagnosed with hearing loss.

The goal of this report, *Towards a New Hearing Equipment Policy for the BC Early Hearing Program*, is to provide the BCEHP with a set of recommendations for the formulation of a clear and consistent policy relating to the provision of hearing equipment for BC children diagnosed with hearing loss. A further objective of this report is to develop recommendations for a BCEHP communications strategy to ensure accurate and timely information regarding the Hearing Equipment Policy is distributed to key stakeholders.

A literature review, a cross-jurisdictional scan of other funding policies for children with hearing loss, and interviews with key informants were conducted to help formulate recommendations for the BCEHP. A review of the academic literature pertaining to the subjects of universal newborn hearing screening and early intervention services for children with hearing loss yielded a significant amount of information. There was considerable consensus regarding the benefits of universal newborn hearing screening within the reviewed literature, as well as substantial evidence to support the amplification of children with moderate to severe bilateral hearing loss. Although there is substantial evidence to suggest that hearing aids are one of the most effective forms of intervention for children with moderate to profound hearing loss, considerable uncertainty remains concerning the most appropriate way to manage children with unilateral and bilateral hearing loss. It should be noted that more research on this subject needs to be conducted, particularly with respect to developing a standardized set of procedures for monitoring children with unilateral and mild bilateral hearing loss and whether personal amplification devices provide measurable benefits for these children between the ages of three months and three and a half years.

Another issue that emerged from the literature review, and BCEHP Hearing Equipment Policy Working Group meetings, was that of the provision of FM equipment. The benefits of FM equipment, especially for children under the age of five years, was not mentioned in any great detail other than to suggest that this particular type of equipment may be useful for older children in educational settings. The members of the BCEHP Hearing Equipment Working Group suggested the provision of FM equipment did not fall within the BCEHP's original mandate, and that resources could be redirected to further assist children with moderate to severe bilateral hearing loss in accessing hearing aids.

The main objective of the cross-jurisdictional scan was to gather information regarding other government policies relating to the provision of hearing equipment for hearing impaired children. Policies from Canada, Australia, the United Kingdom, and the United States were examined and it became evident that the BCEHP's current Hearing Equipment Policy was unique in terms of its extensive and inclusive coverage. The majority of the

other government policies examined are tailored to provide hearing equipment to low-income families, or families caring for children with severe and multiple long-term disabilities. The BCEHP Hearing Equipment Policy is quite similar in the amount of funding offered to eligible children, although it should be noted that several jurisdictions are currently considering the option of increasing the amount of funding available.

Interviews with key informants highlighted a number of key issues including the importance of having clear and consistent eligibility criteria, and the continuing concern surrounding children with unilateral and mild bilateral hearing loss. These interviews also provided a great deal of information regarding the BCEHP's current method of communicating details about program policies and issues to stakeholders, including the use of the BCEHP main public website, the BCEHP Community of Practice internet site, brochures, training workshops, and presentations. There was significant agreement among the key informants that the BCEHP's present communication strategy was effective in disseminating the necessary information to the target audience.

Based on the literature review, the cross-jurisdictional scan and the interviews with key informants, the following recommendations were developed for the consideration of the BCEHP Hearing Equipment Policy Working Group:

1. It is recommended that only children with moderate or greater bilateral hearing loss between the ages of three months and three and a half years be eligible to receive hearing aids under the BCEHP Hearing Equipment Policy.
2. It is recommended that the provision of FM equipment not be included in the BCEHP Hearing Equipment Policy.
3. It is recommended that the BCEHP maintain its current communication strategy when informing key stakeholders about the revised Hearing Equipment Policy.
4. It is recommended that the BCEHP revisit, in the future, the issue of providing intervention services for children with unilateral and mild bilateral hearing loss, especially with respect to fitting children with these types of hearing loss with personal amplification devices.

These recommendations are intended to provide academic and practical support to the Working Group in the development of both a revised Hearing Equipment Policy and communications strategy.

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INTRODUCTION

In March 2005, the BCHEP was established to provide early detection and intervention services for infants and toddlers with hearing loss. One of the primary new services offered by the BCEHP is the provision of funding for hearing equipment such as hearing aids through its Hearing Equipment Policy for eligible children. The BCEHP Hearing Equipment Policy Working Group was formed in May 2009 to review and revise this policy, with special consideration given to forming a policy that included clear and consistent eligibility criteria, and long-term sustainability. The consultant was invited to sit on the BCEHP Hearing Equipment Policy Working Group and to assist the BCEHP in the creation of a new policy through the development of the following report.

The purpose of this report is to develop a set of recommendations for the creation of a new Hearing Equipment Policy for the BCEHP. A secondary objective of this project is to formulate recommendations for the development of a communications strategy to ensure information regarding the policy is disseminated as widely and efficiently as possible to key stakeholders, including audiologists, BCEHP Regional Coordinators, families with children who are deaf or hard of hearing, and other medical professionals providing services to children diagnosed with hearing loss.

The report is divided into several sections beginning with a Background piece that provides further details about the BCEHP, the current Hearing Equipment policy, and the rationale behind the development of this report. The Methodology section describes the research approach taken in the compilation of this report, including a more in-depth description of the academic literature review, environmental scan, and consultations with key informants. The Literature Review follows the Methodology section and focuses on the subjects of universal newborn hearing screening and early intervention services for children with hearing loss and their families. The Findings portion of this report is divided into two main subsections including a cross-jurisdictional scan of other funding options for hearing impaired children, and a summary of the information collected during interviews with key informants. The Discussion section is designed to outline and interpret some of the key issues arising from the two previous sections and how they relate to the report's recommendations. The Recommendations section offers four recommendations for the BCEHP to consider in the development of their new Hearing Equipment Policy and communications strategy.

It is hoped that this report assists the BCEHP in developing a revised policy that will provide substantial support to families, health care professionals, and other caregivers in achieving better development outcomes for hearing impaired children in British Columbia.

BACKGROUND

The BC Early Hearing Program (BCEHP) was established in March 2005 with the mandate to provide early detection and intervention services for infants and children with permanent hearing loss. The program is funded by the BC Ministry of Health Services and is administered through the Provincial Health Services Authority with the assistance of the regional health authorities, the BC Ministry of Children and Family Development, and other provincial partners (BC Early Hearing Program, 2008).

It is estimated that between 80 and 125 children are born each year in the province with permanent hearing loss. Prior to the implementation of universal newborn hearing screening in the province, the average age at which hearing impaired children were diagnosed in the province was forty-four months. Such a delay in identification and intervention can have severe negative repercussions in terms of a child's overall development, particularly in the areas of speech and language (BC Early Hearing Program, 2008). To ensure children with hearing loss living in BC are identified and managed as early as possible, the BCEHP offers a variety of services including; screening by one month of age, confirmation of hearing loss by three months of age, and access to the necessary intervention services by six months of age. As of April 2009, the BCEHP has screened over 46,355 babies and have provided hearing aids and FM equipment to over 280 children (BC Early Hearing Program, personal communication, January 26, 2010).

Intervention services usually include the provision of assistive hearing devices such as hearing aids and FM equipment. The current BCEHP Hearing Equipment Policy, revised in September 2006, provides one set of free hearing aids per eligible child up to the age of three and a half years. Children who develop late onset hearing loss are eligible to receive hearing aids up to the age of five years. The policy also covers the costs of molds, batteries, and repairs for a period of three years or until the child reaches five years of age (BC Early Hearing Program, 2006).

In May 2009, the BCEHP Hearing Equipment Policy Working Group was formed to review the program's current policy on the provision of hearing aids and FM equipment. Several objectives were outlined during the Group's first meeting including:

- Development of consistent and clear eligibility criteria
- Identification and resolution of grey areas in policy
- Development of policy that is sustainable and long-term (3 – 5 years)
- Development of communications strategy (BCEHP Hearing Equipment Policy Working Group, personal communication, May, 15, 2009).

Several concerns were also identified during the Working Group's initial discussion in relation to the hearing equipment policy currently in effect, particularly with respect to eligibility criteria and special populations of children with hearing loss (BCEHP Hearing Equipment Policy Working Group, personal communication, May 15, 2009). Consultations with key stakeholders revealed the need to ensure that the policy's eligibility criteria are clear and consistent in their application. Grey areas regarding the amount of funding available to families, and what types of equipment are funded should also be resolved within the new guidelines. The policy is also not always articulated in the most efficient

manner possible which can lead to confusion among families, audiologists, and other interventionists (Vancouver Island Health Authority, personal communication, July 8, 2009).

The provision of FM equipment is another item of concern for the Working Group, including whether this type of assistive equipment is demonstrably beneficial for the program's target population of infants and young children. Recent budget considerations have also led to doubts surrounding the program's ability to adequately fund the allocation of both FM equipment and hearing aids to eligible children. One of the key decisions to be made through the Working Group and this report is whether to include FM equipment in the new policy (BCEHP Hearing Equipment Policy Working Group, personal communication, May 15, 2009).

One other major consideration in the development of the BCEHP's new policy is in relation to fitting children with mild bilateral and unilateral hearing loss with assistive hearing devices. Currently, there is a lack of strong evidence to suggest very young children with these types of hearing loss are significantly aided by the use of hearing aids or FM equipment. The revised hearing equipment policy will need to outline the appropriate means of intervention that must be taken when managing children with mild bilateral and unilateral hearing loss (BCEHP Hearing Equipment Policy Working Group, personal communication, June 1, 2009).

It is hoped that a review of the academic literature on the topics of universal hearing screening and amplification for children with hearing loss will help address some of the concerns mentioned above. A scan of similar policies in other jurisdictions may also provide guidance for resolving some of the aforementioned issues concerning the BCEHP Hearing Equipment Policy. The ultimate goal of this report is to develop a set of recommendations for the creation of a new hearing equipment policy for the BCEHP. A secondary objective of this research project is to provide recommendations for the development of a communications strategy to ensure information about the new policy is disseminated as widely as possible to key stakeholders.

METHODOLOGY

The project entails the development of a new hearing equipment policy for the BCEHP and the creation of a communication strategy to provide details regarding the policy to key stakeholders. To provide the BCEHP with academic and practical support for the development of these two deliverables this report has been prepared using the following methodology.

A literature review was conducted to lend academic support and evidence to the BCEHP's ultimate goal of ensuring children have equitable and fair access to the assistive devices they require. There is a substantial amount of literature on the subject of early intervention for children with hearing loss and the main objective of this review was to highlight the importance of early hearing screening and intervention for children and their families. Journal articles and reports on the subjects of universal newborn hearing screening and early intervention were obtained electronically through the University of Victoria's library database and through Internet searches using Google, Google Scholar, and the Early Hearing Detection and Intervention Program section of the Centres for Disease Control and Prevention website.

Literature published after 2002 was preferred, although it should be noted that many scholarly studies on the topic of universal newborn hearing screening tend to be less recent than articles concerning early intervention and amplification for children with hearing impairments. While many of the articles referenced in the literature review date from 2002 onward, there are some older pieces of literature that have been included due to their insight on some key issues in regard to universal newborn hearing screening and intervention programs. It is also important to recognize that while the reviewed literature provides solid evidence and information regarding universal newborn hearing screening and forms of intervention significant gaps in the literature still exist. An attempt has been made to identify and explicate these gaps as they appear throughout the literature review.

An environmental scan of other funding options for hearing equipment in other jurisdictions across Canada, the United Kingdom, Australia, and the United States was also conducted to help inform the development of the new BCEHP regulations. A review of current funding and policy options for the provision of hearing aids for children within the province of British Columbia was also done to identify any overlaps that may be in existence. Information was gathered from government websites, government reports and policy manuals, and reports from non-government organizations on the subject of public funding for children with disabilities, including permanent childhood hearing loss.

Finally, interviews with various key informants from the BCEHP, the Vancouver Island Health Authority, the Vancouver Coastal Health Authority, and the Ministry of Children and Family Development were conducted to provide further insight into funding policies in British Columbia designed to assist hearing impaired children with accessing the hearing equipment they require. Key informants were selected due to their direct experience in developing or administering the current BCEHP Hearing Equipment policy, or their

involvement in administering other provincial funding options available for families with hearing impaired children.

An application for ethical approval was submitted in May 2009 to the University of Victoria's Human Research Ethics Review Board. The application detailed the purpose of this report and the methodology used for its compilation, including the process surrounding key informant interviews. Ethical approval was granted by the Human Research Ethics Review Board on June 9, 2009. A copy of the Human Research Ethics Board Certificate of Approval can be found in Appendix A of this report.

LITERATURE REVIEW

The purpose of this literature review is to lend academic support to the BCEHP Hearing Equipment Plan Working Group in the development of a new Hearing Equipment Policy and communications strategy. There are two distinct parts to this literature review; a survey of the academic literature on the subject of universal newborn hearing screening, and a summary of academic studies regarding the topic of early intervention services for children with permanent hearing loss.

Universal Newborn Hearing Screening

There is a substantial amount of literature on the importance of universal newborn hearing screening (UNHS) and the early intervention and management of children diagnosed with hearing loss. The following two subsections are designed to summarize the main findings of the reviewed literature. It should be noted that several of the studies cited in this section describe current gaps in the available evidence and strongly advocate the need for more research in these areas.

Universal newborn hearing screening of infants has been a subject of intense discussion and debate in Canada and other parts of the world for nearly forty years, although programs designed to screen the hearing of newborns are still relatively new in jurisdictions such as Canada, the United Kingdom, the United States, and Australia (Public Health Agency of Canada, 2005). While there is still some opposition to such initiatives from researchers and medical professionals, universal newborn hearing screening is increasingly regarded as a crucial component to ensuring children's overall health and well-being (Fortnum, 2003).

Advocates of universal newborn hearing screening argue such programs are very successful in ensuring children are diagnosed and given the appropriate intervention services at the earliest age possible, which can be hugely beneficial to a child's development, especially in relation to communication and social interaction (Durieux-Smith, Seewald, & Hyde, n.d.). The majority of resistance to universal newborn hearing screening has centered on the issues of available screening technology, parents' attitudes toward screening, and whether screening can lead to improved development outcomes for children.

The early detection of hearing loss in children is the primary goal of universal newborn hearing screening, and although the prevalence rate of permanent hearing loss is usually quite low, many medical professionals and audiologists argue that it is crucial to screen all new infants. Initially, many newborn hearing screening programs were limited to children diagnosed with risk factors such as low birth weight or an infection such as toxoplasmosis or rubella (BC Early Hearing Program, 2009). Recently, however, several jurisdictions such as the United States and United Kingdom have introduced hearing screening for all newborns regardless of their health at birth, and this latter method seems to be more effective in identifying the majority of children born with hearing impairments (Bailey, Bower, Krishnaswamy, & Coates, 2002).

Early detection of hearing loss can have significant repercussions for a child's development, and perhaps the strongest argument in favour of universal newborn hearing screening is its role in identifying hearing impaired children by three months of age. Hearing loss can have a severe impact on a child's communication skills, behaviour, socio-psychological development, and academic achievement, therefore it is crucial to provide children with the services they require at the earliest age possible (Joint Committee on Infant Hearing, 2007). The age at which a child is diagnosed with a hearing impairment in jurisdictions without universal newborn hearing screening can range between eighteen months to five years. Such a delay is considered unacceptable and harmful by many physicians and audiological professionals (McKay, Gravel, & Tharpe, 2008).

Delays in the diagnosis of children with hearing impairments are mitigated by universal newborn hearing screening, and many children that undergo screening have a confirmed diagnosis and referral to intervention services before the age of six months. One study conducted in the United Kingdom for example, revealed that regions with universal newborn hearing screening programs increased the number of referrals to audiologists for children six months of age or younger by a rate of 51 per 100,000 infants (Thompson, McPhillips, Davis, Lieu, Homer & Helfand, 2001). In another report detailing the effectiveness of Colorado's universal newborn hearing screening program, it was noted that eighty-four percent of children identified through the state program received some form of intervention service for their hearing loss by two months of age (Yoshinaga-Itano, 2003).

It is important to note that the provision of early intervention services is not solely dependent on the implementation of a universal newborn hearing screening program, although such programs do assist many hearing impaired children in accessing the support services they require. Wait lists, the availability of audiologists and other medical personnel, and a family's ability to pay for certain services are some of the factors that can contribute to delays between identification and intervention (Sjoblad, Harrison, Roush & McWilliam, 2001). While proponents of UNHS acknowledge the existence of delays between screening and intervention, they maintain that universal newborn hearing screening programs are an essential first step in ensuring children with hearing impairments are managed in the most efficient and effective way possible (Mencher, Davis, DeVoe, Beresford & Bamford, 2001).

While support for universal newborn hearing screening continues to grow in many countries such as Canada, the United States, and Australia, there are still several points of contention in relation to the issue. Until quite recently, one of the major criticisms of UNHS was the inadequacy of screening technology which led to cases of missed or inaccurate diagnoses of newborns with hearing loss (Morton & Nance, 2006). Inadequate technology and dependence on measuring an infant's hearing based on certain behavioural cues created several problems in early hearing screening programs. These difficulties led many critics to argue that the cost of screening technology, and the stress endured by families whose babies had been misdiagnosed, far outweighed any of the perceived benefits of universal newborn hearing screening (Morton & Nance, 2006). The advent of cost-effective and highly accurate screening technology, however, most notably Automated Auditory Brainstem Response and Automated Otoacoustic Emissions testing, has allayed many of the aforementioned concerns to a significant degree (Karzon & Lieu, 2006).

Automated Auditory Brainstem Response (AABR) testing involves placing a soft-tipped earpiece in the outer region of an infant's ear while soft sounds are played. The goal of this thirty minute test is to measure the response of the child's inner ear or cochlea and how well it reacts to sound. In an Automated Otoacoustic Emissions test headphones are placed on the infant and soft clicking noises are sent into the baby's ear. Three sensors are placed on the baby's head and neck to measure his or her response to the clicking sounds (BC Early Hearing Program, 2009). Under most universal newborn hearing screening programs both tests are applied to newborns to ensure the greatest accuracy, and to provide physicians and audiologists with as many details regarding the child's hearing impairment as possible (Morton & Nance, 2006).

Automated Auditory Brainstem Response and Automated Otoacoustic Emissions testing is very effective in identifying and detailing moderate to severe instances of bilateral hearing loss, however, it is not as reliable in diagnosing children with unilateral and mild bilateral hearing loss which is a source of concern for both critics and proponents of universal newborn hearing screening. One solution to identifying this subgroup of hearing impaired children is to offer universal hearing screening in early childhood, ideally before the child enters school, to ensure these children are diagnosed and managed as quickly as possible (Ross, Holstrum, Gaffney, Green, Oyler & Gravel, 2008). Issues regarding children with unilateral and mild bilateral hearing loss will be discussed in greater detail in the following sections of this literature review.

Another argument put forth by critics of UNHS is the potentially negative impact it has on children's families, especially in terms of parental anxiety. One study conducted in the late nineties, however, revealed that the majority of surveyed parents viewed UNHS as incredibly valuable for families and children, and many of these same parents expressed the opinion that UNHS should be made mandatory (Magnuson & Herglis, 1999). Although most of the forty-nine study participants acknowledged they did experience some stress and anxiety regarding the screening, especially in cases where the screening identified a hearing impairment, they felt the screening ultimately had a positive influence on their child's development (Magnuson & Herglis, 1999).

Parents of children diagnosed with unilateral or mild bilateral hearing loss have been shown to experience greater levels of anxiety than parents with children with moderate to profound bilateral hearing loss (Magnuson & Herglis, 1999). This is possibly due to the fact children with unilateral or mild bilateral hearing loss are not necessarily suitable candidates for amplification, as there is little evidence to suggest hearing aids or FM equipment provide any significant benefits to this particular group of children. In these cases parents felt they had fewer options with respect of support services for their child, although most of these individuals still felt quite strongly that universal newborn hearing screening was of great value to families and their children (Magnuson & Herglis, 1999).

Stuart, Moretz, & Yang (2000) conducted a similar survey regarding parents' response to universal newborn hearing screening, although their research focused primarily on mothers of newborns who had failed the screening test and were diagnosed with hearing loss. Mothers whose children failed the hearing screening test were determined to experience similar levels of stress as experienced by mothers whose babies passed the test and were

diagnosed with normal hearing. This study also refuted some critics' claims that diagnosing an infant through UNHS can have a harmful affect on a parent's relationship with their child, and may even lead to significant emotional detachment. The study participants strongly denied any such impact, and insisted an early identification and understanding of their child's hearing loss allowed them to gain the skills and education necessary to better care for their baby (Stuart, Moretz & Yang, 2000).

In the United Kingdom, Alys Young has also done a significant amount of research on the topic of parents' reaction to universal newborn hearing screening. Similar to the studies mentioned previously, Young and her colleagues also noted the predominantly positive response of parents and family members to newborn hearing screening. Young & Tattersall (2007) conducted a survey of twenty-seven families of children who had been identified as deaf through UNHS in order to examine the impact an early identification of deafness has on family dynamics. Twenty-one out of the twenty-seven interviews indicated strong parental support and appreciation for universal newborn hearing screening, and many parents countered the claim of some critics that an early diagnosis of a hearing loss can significantly undermine the bonding process between parent and child (Young & Tattersall, 2007).

Young has also attempted to discern the primary reasons underlying parents' approval of universal newborn hearing screening, despite the negative feelings such as anxiety and depression that can accompany the screening process (Young & Andrews, 2001). One explanation is that parents' anxiety levels may be significantly less if their child is screened and diagnosed as early as possible. Another possibility is parents whose children have been diagnosed with either hearing loss or deafness are appreciative of the fact newborn hearing screening allows them to access intervention services as quickly as possible. One final reason for widespread parental approval proposed by Young relates to family dynamics as parents noted that the ability to relate to their child as hard of hearing or deaf, at as early an age as possible, assisted them in bonding with their child (Young & Andrews, 2001).

It should be noted that despite the amount of research already conducted on the topic, both advocates and opponents of UNHS recognize the need for more studies on the subject of parents' knowledge and reaction to universal newborn hearing screening. In particular, researchers are curious as to whether families' stress and anxiety levels decrease if clear and accurate information about UNHS is provided prior to birth (Magnuson & Herglis, 1999; Stuart, Moretz & Yang, 2000).

Although the reliability of screening technology and the impact of UNHS on the families of newborns have been popular arguments against the widespread implementation of universal newborn hearing screening, both claims have lost considerable traction over the last several years with the emergence of better technology, and studies indicating high rates of parental approval for UNHS. One argument against UNHS that still remains quite prevalent though is that such programs do not lead to significant improvements in a child's developmental outcomes, particularly with respect to speech and language (Fortnum, 2003).

The early detection of hearing loss has long been thought to result in better outcomes for children with hearing impairments although strong evidence in support of this theory has been relatively scarce. Proponents of UNHS admit that there is a pressing need for more

longitudinal studies to track the long-term benefits for children that have passed through a universal newborn hearing screening program. It is important to note, however, that one possible reason for the lack of longitudinal studies is the relative recency of many large-scale UNHS programs. For example, Denmark announced a nation-wide screening program in late 2006 as did the United Kingdom (Konradsson, Kjaerboel & Boerch, 2007; Public Health Agency of Canada, 2005). As a result, many potential research subjects are still in early childhood and measuring outcomes in the areas of speech, language, communication, social ability, and education is extremely difficult.

Another challenge in studying the benefits of universal newborn hearing screening is its close association with various intervention services. There is widespread agreement in the literature that UNHS must be accompanied by intervention services such as amplification, family counselling, and speech and language therapy to be most effective, and it may be difficult to ascertain whether better development outcomes are the result of UNHS or follow-up services (Watkin, 2003). It is the hope of researchers and supporters of UNHS that further studies examining the long-term benefits of early screening programs will be conducted within the next few years as children who have been screened continue to age and eventually enter school (Thompson, McPhillips, Davis, Lieu, Homer & Helfand, 2001).

Research on the subject of UNHS and long-term developmental outcomes for children diagnosed with hearing impairments has mostly occurred in the United States due to the existence of several long-running screening programs. Rhode Island was the first state to implement UNHS in 1989 and was quickly followed by Hawaii in 1990 and Colorado in 1993 (Morton & Nance, 2006). One of the more intriguing early findings from the Colorado universal newborn hearing screening program was that children who were not diagnosed by six months of age could experience significant delays in the area of language development. This discovery contradicted the popular belief at the time that diagnosis between twelve and eighteen months of age was acceptable and would not have any serious negative repercussions for young children (Mehl & Thomson, 2002). Evaluations of several American UNHS programs also revealed that children who participated in screening programs experienced significantly better results in terms of language skills, speech, and cognitive ability than children who had not been screened during infancy (Yoshinaga-Itano, 2003).

Although there is still some debate regarding the efficacy and usefulness of universal newborn hearing screening programs, most notably in relation to the long-term development outcomes associated with such programs, the majority of the reviewed literature seems to agree that UNHS has an important role in children's health. The early identification of a child's hearing loss allows families, audiologists, and other health professionals to assess the child's needs and manage their hearing loss in the most appropriate way possible. In many instances UNHS programs have resulted in children being diagnosed and referred to other services between the ages of three and six months, which has been shown to have a positive impact on a child's overall quality of life.

As also noted in this section, the provision of early intervention services for children diagnosed with hearing loss is pivotal in assisting children and their families achieve the best outcomes possible. The next section of this literature review will examine some of the

key issues relating to early intervention with a special focus on the importance of supplying amplification devices for children with hearing impairments.

Early Intervention Services

It has long been recognized by researchers, medical practitioners, and audiologists that early intervention services such as speech and language therapy, family counselling, education in sign language, and the provision of amplification equipment such as hearing aids are critical in assisting children with hearing loss achieve the best outcomes possible. Hearing impaired children enrolled in some form of intervention program by the age of six months have been shown to experience considerable improvements in the areas of education, social and psychological development, personal independence, and self-esteem (Yoshinaga-Itano, 2003).

Many jurisdictions offer a variety of intervention and management services for hearing impaired children. One of the primary goals of early detection and intervention programs is to develop a personalized care plan that best meets the needs of the individual child (Joint Committee on Infant Hearing, 2000). An increasingly popular element of intervention programs is family-centred counselling and education which can include parent support groups, workshops, and continual one-on-one consultations with the child's interventionists. It is the belief of many audiologists and medical practitioners that effective early education of families with hearing impaired children can increase a child's chances of experiencing improved linguistic, educational, social, and emotional development. Education and counselling can also play a crucial role in managing the stress and anxiety usually associated with families caring for a child with special needs (Magnuson & Herglis, 1999; Watkin, 2003).

While there is a wide range of intervention services available for children with hearing loss and their families, one of the most common and effective forms of hearing loss management continues to be fitting children with personal amplification devices such as hearing aids or FM equipment. There is substantial evidence to indicate that children with moderate to severe bilateral hearing loss in particular benefit from early amplification (BC Early Hearing Program Hearing Equipment Advisory Group, 2006). The potential benefits of hearing equipment for young children with mild bilateral hearing loss and unilateral hearing loss is, however, far less certain, and there seems to be considerable agreement within the literature that more research needs to be conducted in relation to this issue (McKay, Gravel & Tharpe, 2008).

Children with moderate to severe bilateral hearing loss, usually defined as a hearing impairment exceeding 30 decibels, experience considerable challenges in several areas of development. The recent international movement towards large-scale implementation of universal newborn hearing screening and better education about permanent childhood hearing loss however, has led to the earlier identification of children with this particular type of hearing impairment (Konradsson, Kjaerboel & Boerch, 2007). According to some researchers, children with moderate to profound bilateral hearing loss are more likely to be diagnosed and access intervention services at a much younger age than children with mild bilateral and unilateral hearing loss. This is largely due to the fact children with profound

hearing loss are more easily identified through newborn hearing screening programs and other audiological assessments. Parents and other family members are also more likely to recognize certain behaviours indicative of hearing loss with severely hearing impaired children, and consult with an audiological expert (Holstrum, Gaffney, Gravel, Oyler & Ross, 2008).

One of most common intervention strategies applied to children with moderate to severe bilateral hearing loss is providing the child with some form of personal amplification device such as hearing aids, FM equipment, or cochlear implants (Uchanski et al., 2009). Traditionally, children with moderate to profound bilateral hearing loss were not fitted with a personal amplification device until one or two years of age, even if the child was diagnosed during infancy. This was largely due to the widely held belief at the time that speech and language, as well as cognitive development did not begin in earnest until the child was at least one year of age. Recent studies however have indicated that development in these areas begins much earlier, and as stated previously some researchers have noted that significant developmental delays in hearing impaired children can begin at the age of six months if not sooner (McKay, Gravel & Tharpe, 2008; Yoshinaga-Itano, 2003).

In many jurisdictions common amplification practice now includes fitting children with bilateral hearing loss with the appropriate type of hearing equipment by six months of age. For example, in British Columbia, the BC Early Hearing Program recommends amplification devices be provided to children with moderate bilateral hearing loss by six months of age unless there is compelling evidence to suggest such a strategy would not be in the child's best interest (BC Early Hearing Program Hearing Equipment Advisory Group, 2006). In the vast majority of cases children with significant bilateral hearing loss fitted with a personal amplification device are more successful in obtaining the communication and linguistic skills necessary for healthy social interaction and cognitive growth than children who do not receive this type of intervention (BC Early Hearing Program Hearing Equipment Advisory Group, 2006; Uchanski et al, 2009).

While there is little dispute regarding the benefits and appropriateness of amplification for children with moderate to profound bilateral hearing loss, determining whether to fit children with unilateral and mild bilateral hearing loss is far more difficult. Similar to children with more severe cases of hearing loss, children with unilateral or mild bilateral hearing loss experience poorer development outcomes than their normal hearing peers (Holstrum, Gaffney, Gravel, Oyler & Ross, 2008). For example, children with unilateral hearing loss are ten times more likely than children with normal hearing to be held back at least one grade level in school. Other studies have demonstrated children with unilateral hearing loss have less success than children with normal hearing in virtually all measures of development such as reading, language, and social ability (Limb, McManus & Fox, 2006). Although improvements have been made in diagnosing and managing children with unilateral and mild bilateral hearing loss, this particular population of hearing impaired children have not experienced any significant improvements in long-term development outcomes since the 1980s, which is a huge source of concern for physicians, audiological experts, and families (Tharpe, 2008).

One of the primary reasons children with unilateral and mild bilateral hearing loss experience poor development outcomes is the fact many of these children are not diagnosed

until later childhood. For example, the average age of diagnosis for a group of sixty children in Tennessee with unilateral hearing loss was five and a half years. In many instances, children with unilateral and mild bilateral hearing impairments are not identified until they enter school and are usually misdiagnosed as having behavioural problems such as extreme social withdrawal or aggression (Tharpe, 2008). Advances in screening technology and the implementation of more universal newborn hearing screening programs have mitigated this problem to a certain extent. Even with better technology and better access to screening programs however, many children with unilateral and mild bilateral hearing loss are not being identified until later childhood. A late diagnosis leads to later intervention and such a delay can be profoundly harmful to children with any form of hearing loss (Ross, Holstrum, Gaffney, Green, Oyler & Gravel, 2008).

The significant dearth in academic studies and evidence in relation to appropriate intervention for children with unilateral and mild bilateral hearing loss is another reason this group of children experience developmental delays. Audiologists and other interventionists struggle in developing effective care plans for children with less severe forms of hearing loss, as there are no standardized procedures or guidelines for addressing their client's needs, particularly with respect to amplification (McKay, Gravel & Tharpe, 2008). At present, there is little hard evidence to suggest the early provision of a personal amplification device assists children with unilateral or mild bilateral hearing loss, and most of the available evidence in support of amplification is largely subjective. One study even indicated that children with unilateral and mild bilateral hearing loss were less likely to wear or report any benefit from their hearing aids than children with significant bilateral hearing loss (McKay, Gravel & Tharpe, 2008). An older study seems to support the findings outlined above, as it was determined that fifty percent of parent respondents indicated their child with unilateral hearing loss never wore a personal amplification device. Three percent of these same respondents also indicated the only time the personal amplification device was worn by their child was for school, which seems to suggest the benefits of personal amplification for children with unilateral hearing loss are considered to be minimal by both parents and children (Davis, Reeve, Hind, & Bamford, 2001).

The American Academy of Audiology has attempted to offer some recommendations with respect to fitting children with unilateral and mild bilateral hearing loss through the Pediatric Amplification Protocol. The Academy suggests children diagnosed with mild bilateral hearing loss should be fitted for hearing aids or an FM system for use in school as it is believed that children would benefit from amplification in this particular setting. Amplification for children with unilateral hearing loss should be considered on an individual basis in consultation with the child's family and other interventionists (McKay, Gravel & Tharpe, 2008).

There is little dispute within the reviewed literature that more research must be done on the subject of intervention, especially in terms of amplification, for children with unilateral and mild bilateral hearing loss. In particular, researchers and medical professionals would like to better understand the potential benefits of early amplification for children with unilateral and mild bilateral hearing loss. More research on what constitutes effective intervention and management strategies for this population of hearing impaired children would also be

beneficial to health professionals, families, and policymakers (McKay, Gravel & Tharpe, 2008; Tharpe, 2008).

Although there are still significant gaps in the evidence in relation to how to best manage children with some forms of hearing loss, there is substantial consensus in the literature that providing some form of early intervention services for children with hearing impairments generally results in better development outcomes, and an improved quality of life for children and their families. Several jurisdictions provide families with hearing impaired children with funding assistance to help them access the services and equipment they require. A review of such funding options in Canada, the United States, the United Kingdom, and Australia is the subject of the next section of this report.

FINDINGS

The purpose of this section is to present the findings of a cross-jurisdictional scan of government funding options for children requiring the use of hearing equipment. This portion of the report will also summarize the discussions held with key informants directly involved in administering some of the government programs designed to assist hearing impaired children and their families in British Columbia.

Jurisdictional Scan of Funding Options for Hearing Impaired Children and their Families

The purpose of this jurisdictional scan is to detail the current government funding options available for the provision of hearing aids and FM equipment for hearing impaired children and their families. While many jurisdictions offer financial assistance for many different types of intervention services, such as speech and language therapy, information regarding these programs lies beyond the scope of this report. It is the objective of this environmental scan to provide practical support to the BCEHP in the development of a new Hearing Equipment Policy.

Australia

The federal government of Australia provides a variety of hearing services and equipment through the Department of Human Services' Australian Hearing Services agency. Permanent Australian citizens under twenty-one years of age may be eligible to receive various services through this agency including audiological assessments and subsidized hearing aids (Department of Human Services, 2008). Australia's public health insurance, Australian Medicare, does not cover the costs of hearing aids but many forms of private health insurance provide some amount of coverage in relation to the provision of hearing equipment (Medicare Australia, 2009).

Individuals who do not qualify for government funding for the provision of hearing equipment through the Australian Hearing Services agency, may choose to use one of the several Hearing Aid Banks in existence throughout the country. Hearing Aid Banks provide amplification fitting services and hearing aids to clients either free of charge or at a reduced fee depending on the client's income and other personal circumstances (Department of Health and Ageing, 2009). In the state of Victoria for example, Better Hearing Australia fits an average of fifty clients a year with hearing aids, provided these individuals have been unsuccessful in obtaining the necessary funds from other sources, and do not have sufficient income to pay for both hearing aids and fitting fees. The Bank usually charges between \$0 and \$109 for its services, and the amount depends on the client's financial resources. New South Wales also operates a Hearing Aid Bank through Self Help for Hard of Hearing, and assists an average of twenty-five people every year. Prospective clients must have a Health Care Card and demonstrate their ineligibility for other government support programs that could assist them in purchasing the required hearing equipment (Department of Health and Ageing, 2009).

Canada

The federal government administers the Child Disability Benefit (CDB) through the Canada Revenue Agency. This benefit is designed for families caring for severely disabled children eighteen years of age or younger. Families can receive up to \$2,455 per year or \$204.58 per month under this benefit depending on the number of dependent children and household income. It should be noted that not all disabled children are eligible for this benefit and one of the key criteria for eligibility is proof the child has long-term and complex care needs as a result of their physical or developmental impairment (Canada Revenue Agency, 2009).

Health Canada also offers coverage for certain health benefits, including audiological services, for Aboriginal Canadians under the Non-Insured Health Benefits (NIHB) Program. To be eligible to receive health services and equipment through the NIHB, individuals must be registered under the *Indian Act*, or a recognized member of an Inuit Land Claim organization. Children under the age of one year are also eligible to receive benefits provided their parents or guardians are NIHB recipients (Health Canada, 2009). Audiology benefits include a set of hearing aids every five years, equipment repairs as needed, and batteries. Medical approval and information such as recent audiometric tests, diagnosis and description of hearing loss, and information about the amplification device currently in use is required prior to the purchase or replacement of hearing aids (Health Canada, 2009).

Alberta

Alberta residents living with a long-term disability or illness can apply for certain medical benefits through the Alberta Aids to Daily Living (AADL) Program, including personal amplification devices such as hearing aids and FM equipment. Clients pay 25% of the cost of the benefit up to a maximum of \$500 per year. Low income individuals and families receiving income assistance are not required to participate in the cost-share portion of this program (Alberta Ministry of Seniors and Community Supports, 2009).

Through the Alberta Aids to Daily Living Program children, up to the age of eighteen years old, are eligible to receive one pair of hearing aids every five years. Children from birth to the age of three are entitled to receive ear molds every three months, and children aged four to seventeen are permitted to replace ear molds every six months. Prospective clients must be assessed by an audiologist and referred by an otolaryngologist before receiving amplification benefits (Alberta Ministry of Seniors and Community Supports, 2008).

Personal FM systems can also be obtained once every five years through AADL provided the child is under eighteen years of age or a full-time student. Young adults between the ages of eighteen and twenty-four may also qualify if they are listed as a dependent on their guardian's Alberta Health Care Insurance Plan. Clients must use the FM system with hearing aids or a cochlear implant, although individuals with unamplified, unilateral hearing loss are still eligible to receive this particular piece of equipment. One final eligibility criteria is that applicants must successfully demonstrate the FM equipment will be used in a variety of environments, and will not be worn for school purposes only (Alberta Ministry of Seniors and Community Supports, 2008).

British Columbia

The government of British Columbia offers several funding options for hearing impaired children and their families. The BCEHP provides eligible children between the ages of six months to three and a half years with one set of hearing aids. Children that develop late onset hearing loss after three and a half years may be eligible to receive a set of hearing aids until they reach the age of five or enter kindergarten (Newroth, 2009). Medical approval from a family physician, paediatrician, or otologist, as well as a confirmed diagnosis of hearing loss is required before a child may be approved for amplification. As of September 2006, the BCEHP covered the cost of hearing aids up to a maximum of \$800 per hearing aid, or a maximum of \$1700 per hearing aid provided it is combined with a personal FM system. The BCEHP also covers the costs of ear molds, batteries, and hearing aid repairs for a period of three years or until the child either enters kindergarten or turns five years of age (BC Early Hearing Program, 2006).

The BCEHP began funding the provision of FM equipment in 2005, for children already in possession of BCEHP funded hearing aids, or children eligible under the program that had not yet been fitted for amplification. Coverage for FM includes one FM receiver per hearing aid and one FM transmitter. Replacement receivers, microphone, and transmitter batteries as well as equipment repairs, are also covered for a period of three years, or until the child reaches five years of age or enters kindergarten (Newroth, 2009). FM equipment may be used alone, or in conjunction with a hearing aid, although there must be a demonstrable benefit to the child if the personal FM system is the only amplification device in use (Newroth, 2009).

The Ministry of Children and Family Development also provides funding for hearing aids through the Medical Benefits component of the At Home Program which is designed to assist families in caring for children with severe disabilities. Some of the medical benefits included in the At Home Program include audiological supplies and equipment such as hearing aids and FM equipment. Audiology benefits are provided to children with hearing loss who are registered with the At Home Program and have been referred to the program by a registered audiologist. It should be noted that children eligible for medical benefits under the At Home Program must meet the following criteria:

- Under seventeen years of age and a B.C. resident
- Living at home with parent or official guardian
- Dependent in three of the four following areas – eating, dressing, toileting, and washing (BC Ministry of Children and Family Development, 2008).

The Program provides funding for both hearing aids and personal FM systems for eligible children up to a maximum of \$3000 for both ears. It should be noted that children under the care of the government are not necessarily limited to the aforementioned funding amount, and may be eligible to receive more financial assistance if deemed necessary. Hearing aids and FM equipment may be replaced every four years and children are also eligible to receive batteries, ear molds, and repairs free of charge (BC Ministry of Children and Family Development, 2009).

Another source of public funding for the provision of amplification devices for children diagnosed with hearing loss is through the BC Ministry of Education's Provincial Resource Programs. The main objective of the Provincial Resource Programs is to provide schools with the expertise and equipment necessary to meet the needs of students with special educational needs. One such program is the Auditory Outreach Program which provides advice and information to school staff and parents about the educational challenges hearing impaired children may encounter and how best to overcome these difficulties. The program also loans assistive listening equipment, personal FM systems, to children identified as requiring this technology to fully participate in school (Provincial Resource Program – Auditory Outreach, 2009).

A summary of other funding options found within British Columbia for children diagnosed with hearing loss, including financial support provided from charitable non-government organizations, can be found in Appendix B of this report.

Manitoba

The Manitoba Department of Health offers partial funding for individuals with hearing loss who require the use of hearing aids through the organization's Hearing Aid Program. Any Manitoba resident under the age of eighteen may be eligible for funding through this program, although they must be referred to the Department by a medical professional such as an otolaryngologist or audiologist (Manitoba Department of Health, 2009). Through the Hearing Aid Program the provincial government will provide the following types of financial assistance for hearing impaired individuals:

- Pay 80% of cost for Analog hearing aid up to maximum of \$500 per ear
- Pay 80% of cost for Digital hearing aid up to maximum of \$1800
- Pay 80% of costs for services such as fitting fees.

The program does not provide funding for post-warranty repairs, batteries, new ear molds, or the replacement of lost hearing aids (Manitoba Department of Health, 2009).

The Manitoba Department of Family Services and Housing provides financial aid to low-income families to help with the costs of caring for their dependent children through the Manitoba Child Benefit. Eligible families can receive up to a maximum of \$420 per child per year. Single parents earning less than \$15,000 per year are eligible to receive full benefits under this program, while parents earning between \$15,000 and \$20,000 may receive partial benefits (Manitoba Family Services and Housing, 2009). Recipients must be residents of Manitoba, have dependent children under the age of eighteen, and be in receipt of the Canada Child Tax Benefit. Families receiving Employee and Income Assistance, with the exception of this program's health benefits, are not eligible for the Manitoba Child Benefit (Manitoba Family Services and Housing, 2009).

Ontario

The Ontario Ministry of Health and Long-Term Care provides a wide range of medical equipment and services to eligible residents, including hearing aids and FM equipment for children, through the Assistive Devices Program. The Assistive Devices Program (ADP) will cover 75% of the costs of purchasing certain amplification devices up to a maximum of \$1000 for two hearing aids and \$1350 per personal FM system. Recipients are eligible to

receive new hearing aids and FM equipment every three years (Perreault, n.d.). The ADP does not cover the costs of batteries, repairs, ear molds, or FM equipment that is to be used for one specific purpose only such as school. Program recipients must have an Ontario Health Care Card and be referred to the program by a registered audiologist. Recipients are entitled to a 30 day trial period after which they may return their amplification device for other equipment if deemed necessary by the client and their audiologist (Ontario Ministry of Health and Long-Term Care, 2009).

The Assistive Devices Program also works with the Ministry of Education and school districts in the provision of medical equipment for students with special needs. The province allocates Special Education Funding to school districts to assist with the purchase of assistive equipment for students such as personal FM systems. School boards are strongly encouraged to share the costs of purchasing such equipment with the Assistive Devices Program whenever possible (Ontario Ministry of Education, 2007).

Families with severely disabled children may also be eligible to receive financial assistance from the Ministry of Children and Youth Services to help manage care expenses. Families may receive between \$25 and \$430 per month to assist with the costs of specialized child care, medical services, and medical equipment including hearing aids and hearing aid batteries. Household income, the severity of the child's disability, and the costs associated with caring for the child are considered when determining the amount of funds a family will receive through this program (Ontario Ministry of Children and Youth Services, 2009).

The United States

As of 2007, the percentage of newborns screened on annual basis had increased to ninety-five percent, and all fifty states had implemented some form of early detection and intervention program. Families with children with permanent hearing loss usually pay for intervention services, including hearing aids, through private health insurance, Medicaid, or the State Children's Health Insurance Program (Joint Committee on Infant Hearing, 2007).

The federal government jointly funds state Medicaid and children's health insurance options, although it should be noted that each state has different eligibility criteria and coverage options with respect to these programs. All Medicaid programs are designed to provide health insurance for low-income individuals and families that cannot afford to purchase private health insurance. State Children's Health Insurance Programs (SCHIP) are designed to provide health insurance for children from families that do not qualify for Medicaid, but do not have the income or resources to buy private medical coverage (Department of Health and Human Services, 2005). The Federal Social Security Administration also provides some extra financial assistance for low-income families, provided the family is caring for a child with a severe and long-term disability and household income falls within the program's funding guidelines. The amount of funding a family receives is also dependent on the family's current resources and the particular care needs of the child (Social Security Administration, 2009).

Although Medicaid and State Children's Health Insurance Programs vary from state to state, all Medicaid programs and a vast majority of SCHIPs provide some coverage for the provision of hearing aids for children diagnosed with hearing loss (Limb, McManus & Fox,

2006). In California for example, the California Children's Services Program provides coverage for hearing aids provided the child is a permanent California resident under the age of twenty-one, has a diagnosed medical condition, and lives in a household with an income of less than \$40,000 per year. The Program will fund up to a maximum of \$883.80 for one hearing aid, and a maximum of \$1,480.32 for two hearing aids. The Program also provides a maximum of twenty-four hearing aid batteries every three months, although recipients must gain separate approval for this benefit (California Department of Health Care Services, 2000).

Colorado, Indiana, and Massachusetts offer similar coverage options for low-income children and their families. Colorado's Child Health Plan Plus provides inexpensive health insurance, including coverage for the provision of medical equipment, for children and families who do not qualify for Medicaid, but cannot afford adequate private health insurance. To be eligible children must be under eighteen years of age and live in a household with an annual income that is at least 200% below the Federal Poverty Level (Colorado Department of Public Health and Environment, 2009). Colorado also offers the Children's Medicaid Benefit which provides all eligible services and equipment such as hearing aids free of charge for children under the age of eighteen (Colorado Department of Health Care Policy and Financing, 2009).

The state of Indiana grants additional medical insurance for children with serious, long-term disabilities such as profound bilateral hearing loss through the Children's Special Health Care Services Program. Children must be less than twenty-one years of age and have a confirmed diagnosis of a long-term disability, and live in a household with an annual income that is 250% of the Federal Poverty Level (Indiana Department of Health, n.d.). In Massachusetts, the Office of Health and Human Services administers the Hearing Aid Program in conjunction with the state's newborn hearing screening and early intervention initiative. The goal of the Hearing Aid Program is to provide eligible families with the financial assistance necessary to purchase hearing aids for children between the ages of three months and twenty-one years. The amount of funding received varies according to family size and income (Massachusetts Office of Health and Human Services, 2009).

While all American states offer some government coverage for the provision of hearing aids, there is the concern on the part of some families, medical professionals, and stakeholder working groups that coverage in most states is insufficient and they are advocating for more government funding to be directed towards children with hearing loss and their families (Limb, McManus & Fox, 2006).

United Kingdom

The primary government source for the provision of hearing aids for hearing impaired individuals including children is the National Health Service (NHS). Eligible residents may receive a long-term, loaner hearing aid free of charge, provided they have been referred to the NHS by a specialist such as an audiologist or otolaryngologist. The NHS also offers free hearing aid repair services, new ear molds, tubing, and batteries, although clients may be asked to pay for lost or irreparably damaged devices (National Health Service, 2009). Clients also have the option of purchasing hearing aids from private sources but the NHS

does not offer funding to cover these particular costs. Individuals are still eligible to receive NHS hearing aids even if they have purchased a device from a non-government source (Contact a Family, 2009a).

The UK government offers other forms of financial support for children and their families including the Child Tax Credit and Child Benefit which are designed to help families provide for the everyday needs of their children, including services and/or equipment a child may need as a result of a physical or developmental disability. The Child Tax Credit is the child care component of the broader Income Support program offered to families living below a household income of sixteen thousand pounds. Eligibility for Income Support and the Child Tax Credit is determined by a means-test and the amount awarded to recipients varies according to the recipient's income, current state of employment, and other personal circumstances such as the needs of dependent children or other family members (Contact a Family, 2009b).

The Child Benefit is a tax-free payment provided to successful applicants once every four weeks. Eligibility for this particular benefit is not determined by a means-test, and an individual can be considered for this benefit provided they have a dependent child aged seventeen years or younger. The Child Benefit is usually awarded in two separate amounts according to the age of recipient's dependent children:

- Twenty pounds per week for recipient's oldest child
- Thirteen pounds and twenty cents for each of the recipient's other children

It is also important to note that families receiving other benefits such as Income Support or the Child Tax Credit may experience a reduction in these funds if they also receive the Child Benefit (Directgov, 2005).

Since 2003 the Department for Children, Schools and Families has been spearheading the government-wide agenda *Every Child Matters*, in response to concerns surrounding vital services for children, particularly those children who are at-risk of domestic violence and those with special needs. *Aiming High for Disabled Children* is one component of the *Every Child Matters* strategy with the goal of improving, developing, and delivering services for disabled children and their families. One of the primary goals of this program is to ensure all necessary services, such as medical assessments and the provision of medical equipment, children and their families may require are provided in an equitable and timely manner (Department for Children, Schools and Families, 2009).

Summary of Discussions with Key Informants

Five key informant interviews were conducted over the course of writing this paper with the primary aim of gaining a better understanding of provincial government funding options for children diagnosed with hearing loss. All five informants were chosen due to their direct experience in creating or administering the current BCEHP Hearing Equipment Policy, or their direct involvement with other provincial funding programs for children with hearing loss.

Ministry of Children and Family Development

Audiology equipment such as hearing aids, FM equipment, and ear molds are provided by the Ministry of Children and Family Development through the Medical Benefits portion of the At Home Program. According to the key informant, the Ministry conducted a review of the At Home Program's policy relating to audiology services and equipment. Part of this review included a small jurisdictional scan of other public funding options available to children with hearing loss and their families, including the BCEHP and the Ministry of Education (Ministry of Children and Family Development, personal communication, June 22, 2009).

The ultimate goal of the review was to ensure that the Medical Benefits section of the At Home Program was providing sufficient support to families caring for children diagnosed with some form of hearing impairment. It was during this portion of the review that the Ministry discovered many families expressed disappointment that FM equipment was not included in the audiology benefits, and the Ministry has now revised the At Home Program to include the provision of FM equipment to eligible children (Ministry of Children and Family Development, personal communication, June 22, 2009).

A secondary goal of the review was to identify and resolve any overlap surrounding competing government funding options available for children with hearing loss. In consultation with other government ministries and programs it was decided that families should apply to the BCEHP for their child's first set of hearing aids, especially if the child is under the age of three and half years. After this first set of hearing aids, or if the child also had significant mental or physical challenges, families should be directed to the Ministry of Children and Family Development and the Ministry of Education. While the informant acknowledged considerable progress had been made in developing a hierarchy of provincial funding options for children with hearing loss, she did admit that some families still informed her they were confused about which provincial government program to access first for financial support. (Ministry of Children and Family Development, personal communication, June 22, 2009).

Health Authorities

Two informants from the Vancouver Island and Vancouver Coastal Health Authority were interviewed due to their involvement in administering the current BCEHP Hearing Equipment Policy, and their role in the BCEHP Hearing Equipment Policy Working Group. Interview questions focused on the informants' views about the strengths and weaknesses of the current BCEHP Hearing Equipment Policy, as well as their suggestions for effectively communicating information about the new policy to key stakeholders.

There was considerable agreement between the two informants regarding the subject of the current BCEHP Hearing Equipment Policy's strengths, including its accessibility to families and clear eligibility criteria (Vancouver Island Health Authority, personal communication, July 8, 2009). The current policy is also quick and simple to administer which allows children with hearing loss and their families to acquire the hearing equipment they require in as timely a manner as possible (Vancouver Coastal Health Authority,

personal communication, October 14, 2009). Both informants were especially complimentary of the flexibility of the policy's eligibility criteria which allows audiologists and policy coordinators to better serve some children who may not fall seamlessly within eligibility guidelines. This is especially true for children with some forms of unilateral and mild bilateral hearing loss, or children who are eligible but are over the age of three and a half years (Vancouver Coastal Health Authority, personal communication, October 14, 2009; Vancouver Island Health Authority, personal communication, July 8, 2009).

Although the flexibility within the policy's eligibility criteria does offer families, audiologists, and BCEHP administrators several benefits, it was also identified by the two informants as one of the current policy's primary limitations. Such flexibility can lead to problems with interpretation on the part of dispensing audiologists and BCEHP Regional Coordinators, and challenges can arise in applying the policy in as fair and equitable a manner as possible (Vancouver Coastal Health Authority, personal communication, October 14, 2009; Vancouver Island Health Authority, personal communication, July 8, 2009). It should be noted that both informants acknowledged that despite these potential difficulties, the BCEHP has done an admirable job of ensuring all funding is allocated as fairly as possible. Both informants suggested the eligibility criteria should be simplified as much as possible and decisions about eligibility should be explained to families and audiologists whenever possible (Vancouver Coastal Health Authority, personal communication, October 14, 2009; Vancouver Island Health Authority, personal communication, July 8, 2009). The informant from the Vancouver Island Health Authority also proposed the design and implementation of a review process for decisions relating to BCEHP Hearing Equipment Policy eligibility, although such an addition could elongate and complicate the entire process to an unwanted degree (Vancouver Island Health Authority, personal communication, July 8, 2009).

Another concern identified by both informants, which was also identified by the informant from the Ministry of Children and Family Development, was the potential overlap of funding programs for children with hearing loss and their families. In particular, the informants from the health authorities expressed the view that there was significant overlap between the BCEHP Hearing Equipment Policy and the Ministry of Children and Family's At Home Program, although they did note that the issues surrounding this overlap have been resolved to some degree. Currently, the BCEHP is considered to be the first source of funding for eligible children, after which children and their families are directed to other government funding programs such as those offered by the Ministry of Children and Family Development and the Ministry of Education. Children who are not eligible under the BCEHP program are also encouraged to seek out other sources of financial support from other government agencies (Vancouver Coastal Health Authority, personal communication, October 14, 2009). The informants suggested that the aforementioned hierarchy of government funding be clearly communicated to audiologists, regional coordinators, and families to minimize the confusion surrounding this particular issue (Vancouver Coastal Health Authority, personal communication, October 14, 2009; Vancouver Island Health Authority, personal communication, July 8, 2009).

In terms of communication strategy both informants acknowledged current practices for disseminating information about the policy are fairly effective. At present, such information

is posted on the BCEHP public website and the BCEHP Community of Practice website which is targeted towards audiologists and BCEHP Regional Coordinators. Brochures are also made available to families through the main BCEHP website, physicians' offices, and various audiology clinics across the province. Audiologists are kept updated on policy related issues through regular e-mails and training workshops (Vancouver Island Health Authority, personal communication, July 8, 2009). The informant from the Vancouver Coastal Health authority dismissed the possibility of employing mass media such as television or newspapers to disseminate information about the BCEHP Hearing Equipment Policy. The population of children eligible for BCEHP support is too small to justify the substantial expense associated with using mass media, and may cause unnecessary anxiety among families whose children do not qualify for BCEHP funding (Vancouver Coastal Health Authority, personal communication, October 14, 2009).

BC Early Hearing Program

Two informants from the BCEHP were interviewed to discuss their opinions regarding the current BC Hearing Equipment Policy, including what they perceived to be the policy's major strengths and greatest limitations. The informants were also asked how information related to the new policy could best be shared with key stakeholders.

Both informants agreed the primary strengths of the current BCEHP Hearing Equipment Policy are its inclusivity and accessibility in relation to infants and toddlers diagnosed with hearing loss. Families with hearing impaired children are now in a better position to access the hearing equipment their children require due to the funding support provided by the program. Previously, families often experienced delays in acquiring hearing equipment for their children due to the significant cost of purchasing some equipment, and some families were unable fit their child with hearing equipment due to the expense (BC Early Hearing Program, personal communication, September 24, 2009). The Hearing Equipment Policy was also an effective way of marketing the BCEHP to families, audiologists, and other medical professionals when the service was first established in March 2005 (BC Early Hearing Program, personal communication, October 21, 2009).

The informants did differ on what they considered to be the major weaknesses of the current policy. One informant felt the policy's lack of direction and detail regarding how best to serve children with unilateral and mild bilateral hearing loss, particularly in relation to fitting these children with personal amplification devices was of serious concern. According to the informant, there appears to be a lack of consistency in how audiologists and the BCEHP provides services to children with these types of hearing loss, and one goal of the new policy should be to address this issue. One possible suggestion is to make decisions regarding funding eligibility on a case-by-case basis when dealing with children diagnosed with unilateral or mild bilateral hearing loss. Standardized procedures for monitoring these children to see if they experience any significant developmental delays should also be implemented, and they should be provided with the appropriate hearing equipment as necessary (BC Early Hearing Program, personal communication, September 24, 2009).

The other informant viewed the process of dispensing funding through the Hearing Equipment Policy to be a time consuming and laborious process largely due to grey areas surrounding the current policy's eligibility criteria. While the informant did acknowledge the benefits of flexibility within the eligibility guidelines, this same flexibility also creates significant delays during the process, as substantial time is devoted to responding to questions regarding eligibility. It is hoped that the eligibility criteria within the new policy will be considerably more straightforward and easy to interpret by audiologists and BCEHP coordinators (BC Early Hearing Program, personal communication, October 21, 2009).

The informants from the BCEHP echoed the sentiments of the informants from the health authorities on the subject of effective communication strategies. The current practices of posting information on the BCEHP public website and the BCEHP Community of Practice website, as well as providing informative brochures to various health-related locations around the province appear to be effective in disseminating information about BCEHP policy. The informants also agreed that including information about the Hearing Equipment Policy in training workshops and all BCEHP presentations would be a valuable method of informing as many key stakeholders as possible (BC Early Hearing Program, personal communication, September 24, 2009; BC Early Hearing Program, personal communication, October 21, 2009).

DISCUSSION

It is evident from the Literature Review and Findings section that the subjects of universal newborn hearing screening and early intervention services for children diagnosed with permanent hearing loss have gained prominence over the last few years. Many jurisdictions have devoted a considerable amount of study and resources to the issue of appropriate intervention services for very young hearing impaired children. While there appears to be an overwhelming consensus that hearing aids are one of the most effective forms of intervention for children with moderate to profound bilateral hearing loss, there is still a great deal of uncertainty concerning the best way to manage children with unilateral and mild bilateral hearing loss.

The academic literature suggests fitting children with unilateral and mild bilateral hearing loss with personal amplification devices such as hearing aids should be done on a trial basis, and children should only be provided with a personal amplification device on a permanent basis if the trial demonstrates a measurable benefit for the child. At present, there is a lack of concrete evidence to suggest that young children, anywhere between the ages of three months and five years, with unilateral and mild bilateral hearing loss experience better development outcomes with the addition of hearing equipment (McKay, Gravel & Tharpe, 2008).

The government policies relating to the provision of hearing equipment for hearing impaired children reviewed within this report do not seem to make a distinction between children with unilateral and mild bilateral hearing loss and children with moderate to profound bilateral hearing loss. The majority of these policies, with the exception of some in the United States that will only fund children with profound bilateral hearing loss, provide hearing equipment to eligible children regardless of whether they have unilateral or bilateral hearing loss. The BC Early Hearing Program currently provides hearing equipment for children with moderate to profound bilateral hearing loss and children with unilateral and mild bilateral hearing loss, although there is some debate as to whether the BCEHP should continue to provide hearing aids and FM equipment to children with mild cases of hearing loss (BCEHP Hearing Equipment Policy Working Group, personal communication, June 1, 2009).

Given the lack of literature and evidence on the subject of personal amplification devices and children with unilateral and mild bilateral hearing loss, it is perhaps somewhat surprising many jurisdictions do not have policies that are more selective in allocating hearing equipment to children with the aforementioned types of hearing loss. It should be noted, however, that jurisdictions may have practices in place regarding the selection of hearing equipment for hearing impaired children that may not be reflected in the written policy, and these practices could deal more directly with the issue of fitting children with unilateral and mild bilateral hearing loss. It is clear that more research needs to be conducted on the subject of personal amplification devices and children with unilateral and mild bilateral hearing loss, and whether there are perhaps more effective and efficient forms of intervention for this particular population of hearing impaired children.

During key informant interviews and BCEHP Hearing Equipment Policy Working Group meetings, the subject of funding children with unilateral and mild bilateral hearing loss was raised on a number of occasions. The paucity of research evidence on the subject of intervention services for children diagnosed with these types of hearing loss was of particular concern as there was no guidance in the literature as to what constitutes effective forms of intervention and amplification. The consensus that developed during the course of the Working Group's efforts appears to be that funding children with unilateral and mild bilateral hearing loss should be made on a case-by-case basis, and that further study of this particular issue was needed (BC Early Hearing Equipment Policy Working Group, personal communication, October 21, 2009).

In terms of intervention for children with unilateral and mild bilateral hearing loss and policy development for the BCEHP, it could be argued that not fitting children with unilateral and mild bilateral hearing loss would allow for more resources to be allocated to the provision of hearing equipment for children diagnosed with moderate to severe bilateral hearing loss. This may be of particular relevance to the BCEHP, as the program is attempting to fulfill its mandate within tight budgetary restrictions over the next few years. By dedicating the majority of resources to the provision of hearing equipment for children with moderate to profound hearing loss it is estimated that the BCEHP could fit most, if not all, of the eligible children between the ages of three months and three and a half years with hearing aids (BCEHP Hearing Equipment Policy Working Group, June 23, 2009).

Although the decision not to fit children with unilateral and mild bilateral hearing loss with amplification devices under the new policy may lead to additional resources for other children and ensure the revised policy is more consistent and clear, there is a strong possibility that such a decision would be very difficult to implement. It is reasonable to expect such a policy decision would not be favoured by parents whose children have unilateral or mild bilateral hearing loss or by audiologists attempting to meet the needs of both families and children. The BCEHP would have to devote considerable time and resources to explaining the rationale for not including children with unilateral and mild bilateral hearing loss within new policy, and it is doubtful such efforts would be completely successful in assuaging the concerns of some key stakeholders.

Another point of consideration for the development of a new hearing equipment policy for the BCEHP is in regards to the feasibility and necessity of providing FM equipment. The issue of whether the BCEHP should continue to provide FM equipment to eligible children was raised in the first meeting of the BCEHP Hearing Equipment Policy Working Group, and was identified as one of the primary concerns the Group needed to address prior to drafting a new equipment policy. The reviewed academic literature did not refer to the effectiveness or benefits of FM equipment in any great detail, other than to note the technology's potential usefulness in educational settings, and in some instances to help manage feedback from hearing aids. Government policies from Canada, Australia, the United Kingdom, and the United States relating to the provision of hearing equipment do not always include personal FM systems, and the policies that do include FM equipment usually apply to older children within the education system.

While FM equipment may be beneficial for older children, in this case children over the age of five, it is not clear whether personal FM systems have any appreciable positive impact on children who are less than five years old, which is the age group of particular interest to the BC Early Hearing Program. Although the BCEHP does provide personal FM systems, it is not within the program's mandate to do so and more resources may be redirected to providing services to children with moderate to profound bilateral hearing loss if the BCEHP discontinued the allocation of FM equipment.

One of the primary goals of the cross-jurisdictional scan was to provide information about other government policies regarding the provision of hearing equipment for hearing impaired children and their families. In particular, the BCEHP Hearing Equipment Policy Working Group was interested in the eligibility criteria and funding amounts provided by governments in other jurisdictions. It became evident through the scan that the BCEHP's current hearing equipment policy was unique in terms of its expansive coverage as many other policies are largely designed to provide hearing equipment to low-income families or families caring for children with severe, long-term disabilities.

Eligibility criteria for these policies usually involves a multitude of other factors besides the child's hearing loss, including other physical and mental challenges the child may have and the annual household income of the child's family. Although these policies may direct valuable resources to impoverished families struggling to provide for children with multiple health care needs and challenges, they do not provide coverage for children whose only disability is a hearing impairment, or children whose families may not fall within the income requirements stipulated by the specific policy in question. In terms of funding amounts and the type of equipment provided, the BCEHP is equal, and in some cases more generous, than other jurisdictions, although it should be noted that several governments are currently considering an increase in the amount of coverage available to children with permanent hearing loss.

It is recommended that if the BCEHP Hearing Equipment Policy Working Group decides to revise the eligibility criteria for receiving hearing equipment through the program, it should not do so on the basis of the child's other potential disabilities or financial resources of the child's family. Eligibility criteria based on the severity of a child's disability and family income can place significant restrictions on the number of children covered by the policy, and this runs counter to the BCEHP's goal of developing a policy that is as accessible and equitable as possible.

A secondary objective of this report was to develop a possible communication strategy for the BCEHP to ensure information regarding the new policy is distributed as widely and effectively as possible to key stakeholders. Consultations with key informants revealed that the current method of distributing information about the Hearing Equipment Policy seems to be quite effective, especially with regards to posting relevant material on the BCEHP public website and the BCEHP Community of Practice internet site. There was also considerable agreement among informants that including information and updates on the new policy should be an integral part of all training workshops and presentations given by the BC Early Hearing Program, and that feedback from stakeholders should be encouraged as much as possible. It would be prudent for any new communication strategy, if one is

deemed necessary, to include these element as they appear to be quite effective in providing information about the Hearing Equipment Policy in a clear and concise manner to concerned parties including audiologists, medical professionals, other government organizations, and families.

RECOMMENDATIONS

The following section will outline three recommendations for the development of a new hearing equipment policy and communications strategy for the BC Early Hearing Program. A brief rationale and an outline of any potential challenges associated with the recommendation will follow each recommendation.

Recommendation #1: It is recommended that only children with moderate or greater bilateral hearing loss between the ages of three months and three and a half years be routinely eligible to receive hearing aids under the BCEHP Hearing Equipment Policy.

As previously stated, the benefits of fitting children with moderate to profound bilateral hearing loss with hearing aids is well documented in a variety of literature including academic studies and various government reports. There is little concrete evidence on the other hand to support fitting children with unilateral and mild bilateral hearing loss with personal amplification devices. The BCEHP's current budgetary situation would make it exceedingly difficult, if not impossible, to fit all eligible children with hearing aids if children with unilateral and mild bilateral hearing loss were included in the new policy. It is therefore recommended that the new policy accommodate the population of children with moderate to profound bilateral hearing loss first, prior to the possible addition of children with lesser degrees of hearing loss.

It is understandable that some stakeholders, particularly families with children with unilateral and mild bilateral hearing loss, will not be entirely supportive of this decision. It is therefore recommended that the policy, and any accompanying materials, contain an explicit and clearly articulated rationale for why children with unilateral and mild bilateral hearing loss are not included in this particular incarnation of the Hearing Equipment Policy. Families, audiologists, and other interventionists should also be educated in regard to other possible funding options for children with unilateral and mild bilateral hearing loss such as the BC Ministry of Children and Family Development, the BC Ministry of Education, and various non-profit organizations within the province such as the HIKE Fund or the Variety Club of British Columbia.

It is also suggested the BCEHP Hearing Equipment Policy Working Group consider adding a proviso within the new policy relating to the management of children with unilateral and mild bilateral hearing loss who experience significant delays. The BCEHP might consider formulating a set of procedures whereby a child with unilateral or mild bilateral hearing loss experiencing poor speech and language development may receive funding for the provision of amplification devices.

The intent of this recommendation is not to dissuade the BCEHP from ever providing hearing equipment to children with unilateral and mild bilateral hearing loss, but given the current budgetary and resource constraints of the BCEHP it is not practical at this time to fund all eligible hearing impaired children. This does not preclude the BCEHP from fitting

this subpopulation of hearing impaired children in the future, provided there is more compelling evidence to support the amplification of children with unilateral and mild bilateral hearing loss, and the BCEHP has the resources to provide this service.

Recommendation #2: It is recommended that the provision of FM equipment not be included in the BCEHP Hearing Equipment Policy.

Personal FM systems have been demonstrated to provide some benefit for children in educational settings and in reducing feedback in some cases with children with hearing aids, however, it is still unclear as to how beneficial personal FM systems are to very young children. At the present time, the BCEHP is not in the financial position to provide hearing aids and FM equipment to all children eligible under the program, and there is evidence in the academic literature and from consultations with key informants that hearing aids lead to more positive results in younger children than personal FM systems. It is therefore recommended that the new policy not include FM equipment, and that families and interventionists be directed to other sources of FM equipment such as the BC Ministry of Education and the BC Ministry of Children and Family Development.

There are some families and audiologists that may object to the exclusion of FM equipment, therefore it is important the BCEHP communicate the rationale for not including personal FM systems within the revised policy. This information can be communicated through the BCEHP's Community of Practice website, the BCEHP's public website, and in various written sources distributed to public audiology clinics and physicians' offices. It should also be made clear that the provision of FM equipment has never been part of the BCEHP's mandate, and that the Program is still fulfilling its stated objectives even without the inclusion of FM equipment in its Hearing Equipment Policy.

Recommendation #3: It is recommended that the BCEHP maintain its current communication strategy when informing key stakeholders about the revised Hearing Equipment Policy.

The BCEHP's present strategy of informing stakeholders about Hearing Equipment Policy and other program issues seems to be quite effective, especially in relation to posting regular updates on the BCEHP's public website and the Community of Practice website. Key informant interviews also revealed widespread approval of including the Hearing Equipment Policy and related information in all training workshops and presentations given by the BC Early Hearing Program, as these events provide a good opportunity to clarify any questions and to solicit feedback from interested parties.

The BCEHP might consider the future addition of a web-based forum to be included on the BCEHP public internet site or the Community of Practice website to further facilitate discussion relating to the Hearing Equipment Policy. Such a forum could be used to answer questions and collect stakeholder suggestions on policy-related issues which could be beneficial to any policy revisions that may need to be made in the future. It is unclear whether such an option is feasible for the BCEHP at this time as it would require some allocation of human and financial resources that may be currently unavailable.

Recommendation #4: It is recommended that the BCEHP revisit, in the future, the issue of providing intervention services for children with unilateral and mild bilateral

hearing loss, especially with respect to fitting children with these types of hearing loss with personal amplification devices.

The provision of appropriate intervention services for infants and young children diagnosed with unilateral and mild bilateral hearing loss continues to be of considerable concern to the BC Early Hearing Program. Key informant interviews yielded a general consensus that there is currently a lack of consistency in how the BCEHP delivers intervention services, including amplification devices, to this particular population of hearing impaired children. At present, there is insufficient academic evidence to support the development of a standardized set of procedures for providing appropriate intervention services for children with these types of hearing loss, particularly with respect to fitting these children with amplification during infancy and early childhood. It is strongly recommended that the BCEHP continue to examine this particular issue and perhaps conduct more research and study on this subject in order to meet the needs of families with children diagnosed with mild bilateral and unilateral hearing loss. This may be a long-term goal of the BCEHP depending on the resources available to conduct this research, but it is strongly believed further study would assist the BC Early Hearing Program in serving its clients in the most efficient and effective manner possible.

CONCLUSION

The primary goal of this report was to develop a set of recommendations for the development of a new Hearing Equipment Policy for the BC Early Program. The secondary purpose of this report was to provide the BCEHP with recommendations for the creation of a communications strategy to ensure information about the revised policy is disseminated as widely as possible to key stakeholders.

In an effort to formulate the aforementioned recommendations a review of the academic literature was conducted on the topics of universal newborn hearing screening and early intervention services for children diagnosed with hearing loss, particularly with respect to personal amplification devices such as hearing aids and FM equipment. A cross-jurisdictional scan of similar policies was also completed to provide practical support to the BCEHP in resolving some of the concerns mentioned by the BCEHP Hearing Equipment Policy Working Group, including appropriate funding amounts for eligible applicants, eligibility criteria, and the continuing dilemma of how to best support children with unilateral and mild bilateral hearing loss within the context of the BCEHP Hearing Equipment Policy. Five key informants from the Ministry of Children and Family Development, the Vancouver Island Health Authority, the Vancouver Coastal Authority, and the BC Early Hearing Program were also interviewed to gain a better understanding of the current BCEHP Hearing Equipment Policy and other provincial government funding options that are available to families with hearing impaired children.

Four recommendations were developed as result of the literature review, cross-jurisdictional scan, and key informant consultations:

1. It is recommended that only children with moderate or greater bilateral hearing loss between the ages of three months and three and a half years be eligible to receive hearing aids under the BCEHP Hearing Equipment Policy.
2. It is recommended that the provision of FM equipment not be included in the BCEHP Hearing Equipment Policy.
3. It is recommended that the BCEHP maintain its current communication strategy when informing key stakeholders about the revised Hearing Equipment Policy.
4. It is recommended that the BCEHP revisit, in the future, the issue of providing intervention services for children with unilateral and mild bilateral hearing loss, especially with respect to fitting children with these types of hearing loss with personal amplification devices.

It is hoped these recommendations will be reviewed by the BCEHP Hearing Equipment Policy Working Group and assist the Group in the development of the new Hearing Equipment Policy, and will provide the BCEHP with a communications strategy to ensure details of the policy will be circulated to as many stakeholders as possible.

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APPENDIX B – Summary of Provincial Funding Options for Hearing Impaired Children and their Families

CKNW Orphan's Fund

Eligibility Criteria:

- Children must be between 0-19 years of age
- Needs have been assessed and supported by recognized professional (eg. doctor, teacher, etc.)
- Do not qualify for other government-sponsored funding or are on extensive wait list
- Financially at risk – gross family income used to determine level of financial risk
 - Tax Assessment and other such documents from Revenue Canada
 - Current record of monthly income and expenses
- Agree to conditions of approval such as providing progress reports, apply Orphan's Fund logo stickers to equipment, not selling or disposing of equipment without Fund's consent etc.
- Maximum funds that are available for any one child is \$5,000.00 – cost-sharing with other organizations is encouraged

HIKE (Hearing Impaired Kids Equipment Fund) – International Order of Job's Daughters

Eligibility Criteria:

- Children under age of 20 identified as needing amplification device may benefit
- Approval process may take from 4 – 6 weeks depending on documentation and availability of funds
 - Need three forms – Application Checklist, Application Form, and Financial Disclosure Form
 - Need recent audiogram and prescription for device as provided by doctor or registered audiologist
 - Itemized quotation for the device and associated supplies
- Financial need assessed by examination of income tax statements (T4), and expenses (invoices, receipts, bank statements etc.)

Lions of BC Hearing Conservation Society

Eligibility Criteria:

- Request for financial help should be made to a Local Lions Club by the applicant
- Applicant must prove they are in need of financial aid – if approved Club will pay for the costs of the hearing aids, hearing test, and provider service charges
- Audiogram (within past 6 months) and recommendations of Audiologist

- When reviewing application Club should determine whether alternative funding sources such as Medicare, Insurance or Social Assistance could be accessed

Ministry of Children and Family Development – At Home Program (Medical Benefits)

Eligibility Criteria:

- Children must be dependent in four out of four areas of daily living (eating, dressing, toileting, and washing) to qualify for respite and medical benefits
 - Children who are dependent in three out of four areas may qualify for respite or medical benefits
 - Children must be enrolled with BC Medical Services Plan
 - There is an appeal process – families who disagree with decision regarding medical benefits should contact Manager of Medical Benefits
- Children 17 years of age and younger can qualify for various medical benefits including hearing aids
- Hearing Aids – provides analog and digital hearing aids and personal FM equipment
 - Funding available to max. \$1500/ear or \$3000 for both ears with minimum replacement period of four years
 - Following items are also available – batteries (52/year/ear), ear molds/swim molds, and air blowers
 - Requests must be submitted by audiologist with a justification and audiogram taken within 6 months of the application – requests should include the type and quantity of batteries needed

Ministry of Education – Provincial Outreach Program – Auditory Outreach

Eligibility Criteria:

- Program loans assistive listening devices for children identified as requiring this technology for school use – must be recommended by audiologist
- Parents/legal guardians must sign Permission to Share Information Form (R1)
 - Must collect all relevant information eg. medical, educational, speech-language pathology reports and recent (within six months) audiological report and unaided audiogram
 - Must complete Referral Form (R2) and send it along with Permission Form and R1 to Provincial Resource Program

Non-Insured Health Benefits – First Nations, Inuit, and Aboriginal Health

Eligibility Criteria:

- Canadian resident and who falls under one of the following categories:
 - Registered Indian under *Indian Act*
 - Inuk recognized by an Inuit Land Claim organization
 - Infant (less than one year) whose parent is eligible recipient
- Recipients may appeal if have been denied coverage under NIHB

- For the purpose of obtaining a hearing aid under NIHB require the following:
 - Audiometric test (within last six months)
 - Current hearing aid information – current repair history if the request is in regards to paying for hearing aid repair
 - Copy of third party coverage (if applicable)
 - Any other information physician, audiologist etc., may find relevant
- NIHB Audiology Benefits does not include coverage for FM equipment

Quota International

Eligibility Criteria:

- Assists children with provision of hearing aids, molds, and FM equipment for schools or centres – recently donated FM sound system to South Okanagan School District
- Eligibility based on financial need, living in local area and being referred by community member or someone associated with the school system

Variety Children's Charity

Has assisted families in the purchase of hearing aids, moulds, Cochlear implants, and FM equipment. Variety has also provided support to the Vancouver Oral Centre, the BC Hearing Centre, and the Provincial School for the Deaf. The 'I Can Talk Too' program based out of Sunnyhill was also supported for many years through Variety's I CAN fundraising events. Variety is currently reviewing their application process and procedures to reflect the 'electronic age'.

Eligibility Criteria:

- Grants made on individual basis with referral from audiologist, doctors, teacher, etc.
- Children must be between the ages of 0 and 19 and a resident of British Columbia
- Children must have a special need (physical, cognitive, sensory etc.) as diagnosed by recognized professional
- Family must demonstrate proof of hardship or financial need – need is determined by reviewing family's Notice of Assessment, current financial situation, urgency of request, and other financial costs the family has incurred over the year
- Families must also complete 3-page application that essentially provides information regarding details of the child's condition and the type of service required. Application also includes referral letter from professional and the estimated cost of the service being requested.