

Improving Children’s Lives and Government’s Bottom Line:

The Value of Early Identification of Communication and Hearing Disorders in Children

Introduction

Our society sprinkles witticisms throughout our daily lives to keep simple lessons at the forefront of our thinking. We’ve all heard them hundreds of times: a stitch in time saves nine; spend now to save later. The list goes on. They reinforce the value of identifying and acting upon problems or opportunities as early as possible, lest they inevitably become bigger, more difficult and more expensive to deal with. But, as is too often the case, our policies often do not practice what we preach in our day-to-day lives.

This paper looks to an area of health policy – the early identification of communication and hearing disorders in infants and children. Studies universally find that the earlier these disorders are identified and treated, the better the long-term outcome for the children affected by them. There are also significant cost advantages for the healthcare, education and social/justice systems in identifying and acting on these problems before they become severe. First, this paper will look at the merits of early identification in general, and then focus specifically on the need for universal newborn hearing screening and early identification of communication disorders.

On Early Detection and Intervention

Government must be careful when crafting policy to ensure that it meets the dual objectives of offering the greatest possible benefit to those that it is trying to help, while at the same time using finite financial resources as efficiently as possible. Investing in programs that offer developmental or educational benefits for young children and their families more than meet these criteria, and generally have the greatest cost-benefit ratio. Acting early means that children affected with speech, language and/or hearing disorders are not unduly harmed during critical years of their intellectual, social and communication development. At the same time, it reduces the likelihood that they will need to draw on expensive government social services in the long run.

Early development is the basis for future academic and life skills. It is during this period that a child’s capacity to learn is largely established. On a physical level, as children age, their brains become much less malleable, making it more difficult for them to respond to potential intervention. In effect, acting later runs the risk of seeing parts of the brain “hardwired” in a fashion that makes improving the impairment difficult. Even on a less physical basis, it is easier to teach children appropriate strategies for dealing with their difficulties at the outset, before they need to “unlearn” ineffective ones. Similarly, skills are cumulative, meaning that difficulties mastering rudimentary skills will mean a corresponding difficulty with later ones that are more complicated. With young children, communication is central to all social and academic skill development (i.e., learning math concepts or learning to read). Any problems in the area of communication will result in difficulties and delays in mastering the first building blocks of learning. Minimizing factors that hinder a child’s ability to learn and develop will help ensure they are on course to be as successful, productive, and well-adjusted as possible.

Waiting too long to begin intervention runs the risk of “locking in” problems and limiting the effectiveness of potential treatments. Long-standing communication problems cannot be

remediated easily, if at all, so early investment has a sort of “multiplier effect.” A dollar invested in addressing problems today will mean many more saved in the long term. Along the same lines, inaction carries with it very high long-term costs.

While government and society certainly benefit from avoiding such long-term costs – the cumulative costs of services for a child with challenging behaviour can easily be 10 times the cost of early intervention – the real costs of late intervention are borne by the children affected in this way. As we will see in subsequent sections, children with communication and hearing problems often experience more difficulty in social, learning and emotional environments. Acting early means that they can get the support they need to avoid difficulties and challenges that their peers do not experience or understand.

The need for Universal Newborn Hearing Screening

In much of Canada, the average child with significant hearing loss is usually not identified until they are nearly two and a half years old. For moderate hearing issues, problems are unlikely to be identified until school age. This need not be the case. Simple, non-invasive, highly accurate tests exist that can quickly screen for hearing loss in newborns and can be performed before they leave the hospital. More importantly, in an era where medical diagnostics can present a burden on provincial health budgets, this test is inexpensive, costing only about \$35 per infant screened. When measuring per case identified, it costs much less than a number of other existing newborn tests, such as for phenylketonuria (PKU – which can cost \$60,750 as compared to \$14,400 for hearing loss). Moreover, as outlined above, this is another case of spending now to save later, as any upfront expense will be more than offset by reducing the need for specialized education and other support programs later on.

The advantages to identifying hearing loss early are clear: infants with hearing loss that are identified by the age of six months perform 20 to 40 percentile points better on school related language measures than those that are identified later. Identification by six months also leads to much better language scores than for those identified later, an advantage that holds true even when controlling for a bevy of other usual predictive factors, including gender, racial background or the presence of other disabilities. By acting early, children with hearing disorders need not suffer unduly.

The United States already screens more than 95 per cent of infants, and this testing is a legislated requirement in at least 33 states. To minimize the negative academic, vocational and social implications of unidentified hearing loss and to reduce the long-term economic consequences of delayed identification of hearing loss, Canada should follow this lead and implement a universal newborn hearing screening program. Such a program should aim to have all newborns, not just those deemed “high risk,” screened in the first month of life (preferably before leaving the hospital), with any necessary diagnostic testing completed by three months and any necessary intervention beginning no later than six months of age. This goal reflects the aims of the U.S. Joint Committee on Infant Hearing, which strives to ensure access to early identification and intervention of hearing issues.

Current Canadian practice for newborn hearing screening is inconsistent. There is no coordinated national approach to this issue, and in most cases there is no dedicated funding for newborn hearing screening. No provinces have legislated requirements that infants be tested. Some, such

as Ontario and New Brunswick, have offered newborn hearing screening for some time, while others, such as Manitoba, Saskatchewan, Newfoundland and Alberta, have no universal programs (only some regional offerings). In those areas without universal newborn hearing screening programs, there is often no equipment or expertise to conduct hearing screening of newborns at birthing hospitals, so parents do not even have the option of having their babies screened. A coordinated, national approach will ensure that all babies born in Canada have equal access to hearing screening that can identify hearing difficulties at an age when they are most easily managed.

Catching Communication Disorders Early

It is estimated that eight to twelve percent of pre-school aged children have some form of language impairment. Most are not identified until after they fail to begin speaking, generally when they are two or three years old. This is, quite simply, too late, and means that communication development is unduly hindered, leaving these children at an academic and social disadvantage.

Communication skills are central to a child's social-emotional and psychological development, and even the most minor of impairments can have a negative effect. Early development has strong effects on future development, so intervention is more effective and expedient when begun at as young an age as possible. A University of British Columbia study found that vocabulary strength at 18 months had implications for such strength at 27 months and at three years of age. Other studies have shown that when a child's treatment is delayed until their pre-kindergarten year, they usually do not have normal speech outcomes before they enter the first grade, and as many as 72 per cent will still have speech and/or language problems at age 12. Thus, delays in starting treatment prolong the process of addressing these disorders.

Untreated communication disorders can cause serious and dangerous social problems for affected children that, in addition to contributing to difficulties in learning, have a real negative effect on their lives and the lives of their families, not to mention society in general. Over half the children with speech-language impairments at age five have some form of behavioural disorder, such as attention deficit with hyperactivity disorder (ADHD). Aggressive behaviour problems are more common among children with speech-language impairments, as are anxiety disorders. Children with communication disorders have more difficulty making friends with their peers, and are at a greater risk of being bullied at school or elsewhere. Finally, there are high levels of speech-language and other communication difficulties among the young offender population. Many young offenders have difficulties in using language in the right way.

In summary, communication problems that remain unaddressed leave children at a developmental, educational and social disadvantage, and delays in treatment result in a longer and more difficult process to overcome these challenges. The extra difficulties in learning and socializing deny them opportunities to be as successful as their peers. Additionally, these problems can lead to a series of frustrations that cause them to act out in ways that are destructive to themselves and others.

Unlike newborn hearing screening, there is no one test to identify all communication disorders, nor is it necessarily an issue that can be readily identified shortly after birth. However, there are still important steps that can be taken to identify communication disorders, or the relative risk

thereof, before they become entrenched and are more difficult to resolve. These steps can include speech and language screening tools for new parents, accessible screening clinics in communities, materials available in many languages on the importance of talking with and reading to young children, etc.

Communication disorders come with real harms that, left unaddressed or undetected, cause severe hardship to the individual and real costs to society. It is important that governments ensure that adequate resources are made available for the early detection of these disorders, and that access to support community-based services and resources are available for children and their families. Too often these disorders are only detected when there is clearly a problem and a child has experienced significant failure. Compounding the issue of late identification is the reality that wait lists for access to speech-language pathology services can be prohibitively long.

Conclusion

In their 2007 look at the science of early development and its policy implications, Margaret McCain, Fraser Mustard and Stuart Shanker argue that if “we truly wish to provide our children with an equal opportunity to maximize their potential, whatever that might be, it is vital that we do everything we can to enhance their early development.” By doing so we make the most of their chance to develop the skills needed to face today’s world. We also mitigate or prevent a host of developmental, behavioural and psychological problems that limit an individual’s potential and carry a tremendous societal cost.

Hearing and communication are central to a child’s development and difficulties in either will dramatically impact learning outcomes. Children that face such difficulties will likely experience greater social challenges than their unaffected peers, including difficulty making friends. They are more likely to have behavioural problems, anxiety issues, and lower self-esteem. Delaying intervention will only compound these problems, hindering a child’s ability to attain optimal development during their precious early years, and making it more difficult to develop and implement strategies for overcoming or compensating for them.

The practical case for early identification of children’s hearing and communication disorders is clear: early identification leads to early intervention, which costs government less in the long run and offers dramatically better quality of life for those children and families that receive timely and appropriate services. They deserve every opportunity to be successful, and should not be made to suffer because of unnecessary delays in identifying potential problems when the necessary screening tools already exist. Nor can our health and education systems and social safety net afford the costs of later action.

About CASLPA

CASLPA is the national body that supports and represents the professional needs of over 5,500 speech-language pathologists, audiologists and supportive personnel who work to maximize the communication and hearing potential of the people of Canada.

CASLPA members are a key component of Canada’s health care and education teams, and work in concert with other health and education professionals to ensure that Canadians have access to the information and expertise they need to live successful and productive lives. Speech-language pathologists have expertise in typical development, assessment and intervention of

communication and swallowing disorders. Audiologists identify and manage individuals with peripheral or central hearing loss, tinnitus and balance disorders.

References

Joint Committee on Infant Hearing, “Year 2007 Position Statement: Principles and Guidelines for Early Hearing Detection and Intervention Programs.” PEDIATRICS Vol. 120 No. 4 October 2007, pp. 898-921 (doi:10.1542/peds.2007-2333).

Alberta College of Speech-Language Pathologists and Audiologists “Endorsement of Universal Newborn Hearing Screening (UNHS) in Alberta.” Available electronically at:
[http://www.acslpa.ab.ca/public/data/documents/UNHS - single sided & electronic.pdf](http://www.acslpa.ab.ca/public/data/documents/UNHS_-_single_sided_&_electronic.pdf)

American Speech-Language-Hearing Association. (2004). Preferred Practice Patterns for the Profession of Speech-Language Pathology [Preferred Practice Patterns]. Available from
www.asha.org/policy

Christine Yoshinaga-Itano*, Allison L. Sedey*, Diane K. Coulter*, and Albert L. Mehl, “Language of Early- and Later-identified Children With Hearing Loss.” PEDIATRICS Vol. 102 No. 5 November 1998, pp. 1161-1171.

Department for Children, Schools, and Families “Early intervention: Securing Good Outcomes for all Children and Young People.” 2010 Available electronically at:
www.dcsf.gov.uk/everychildmatters

Durieux-Smith, A; Seewald, R, and Hyde, M. “Position Paper on Universal Newborn and Infant Hearing Screening in Canada.” CASLPA and CAA 1999. Available electronically at:
<http://www.caslpa.ca/PDF/position%20papers/newborn%20infant%20hearing%20screening%20for%20pdf.pdf>

National Literacy Trust “The long term impact of early speech, language, and communication difficulties.” Available electronically at:
http://www.literacytrust.org.uk/assets/0000/2873/Long-term_impact_of_slds.pdf

Norrie McCain, Margaret, Mustard, J. Fraser, and Shanker, Stuart “Early Years Study 2: Putting Science into Action” Council for Early Child Development, Toronto: March 2007.

Statham, June and Smith, Marjorie “Issues in Earlier Intervention: Identifying and supporting children with additional needs.” Institute of Education, University of London: Thomas Coram Research Unit; available electronically at
<http://publications.dcsf.gov.uk/eOrderingDownload/DCSF-RR205.pdf>

Yoshinaga-Itano, Christine; Sedey, Allison L.; Coulter, Diane K.; and Mehl, Albert L. “Language of Early- and Later-identified Children With Hearing Loss.” PEDIATRICS Vol. 102 No. 5 November 1998, pp. 1161-1171.