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Early Intervention for Children with Developmental Delays: A National Inventory

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Thesis submitted in partial fulfillment of the requirements for the degree of

MA in Educational Psychology

September 2007

Your file Votre référence
ISBN: 978-0-494-38464-0
Our file Notre référence
ISBN: 978-0-494-38464-0

Abstract

This study was designed to examine the most common characteristics, best practices, and gaps in service delivery at Early Intervention (EI) centres across Canada. A 29-item survey designed to investigate services, funding, waitlists, satisfaction, and perceptions of success was completed by 184 service providers. Provinces and territories were grouped according to time zone and five resulting samples were compared. Samples were comparable in terms of waitlists, perception of success and government contributions. Significant differences were found in terms of the number of professionals working at the centre, with the Mountain and Eastern samples having the most multidisciplinary centres. In addition to making cross-province comparisons, Canadian findings were also explored. As the proportion of government funding decreased and private funding increased, ratings of satisfaction significantly increased. Findings were discussed in relation to the relevance to Canadian EI centres and directions for future research were explored.

Résumé

Cette étude a été conçue dans le but d'explorer les meilleures pratiques, les caractéristiques les plus communes, ainsi que les trous dans la distribution de services au sein des centres d'intervention précoce à travers le Canada. 184 prestataires de services ont participé à un sondage comprenant 29 items, élaboré pour examiner divers aspects de l'intervetion précoce tels les services, le financement, les listes d'attente, le niveau de satisfaction ainsi que de la perception de succès. Les provinces et les territoires ont été regroupés d'après les fuseaux horaires, ce qui nous a donné 5 échantillons, comparables en termes de listes d'attente, de perceptions de succès, ainsi que de subventions gouvernementales. Nous avons trouvé des différences significatives dans le nombre de professionnels travaillant dans les divers centres: on retrouve les centres les plus multidisciplinaires dans les zones montagnère et de l'est. En plus de faire des comparaisons inter-provinciales, nous avons aussi explorer les conclusions canadiennes. Avec la diminution de financement public et l'augmentation de financement privée, ainsi augmentait de façon significative les niveaux de satisfaction. Les conclusions ont été discutées par rapport à la pertinance au centres d'intervention précoce au Canada et des directions de recherche futures ont été proposées.

Acknowledgements

I would like to acknowledge my supervisor, Professor Ingrid E. Sladeczek, for her guidance, encouragement, and invaluable support throughout the preparation of this thesis. I appreciate her enthusiasm and expertise in the area as they served as motivation for me throughout the process.

I would also like to thank Mr. Daniel Amar of Yaldei Developmental Centre, who served as co-investigator of the Canadian Early Intervention Research Study with Dr. Sladeczek, the research project under which I completed this valuable study. I would also like to thank my colleagues from the research team, Nancy Miodrag, Anastasia Karagiannakis, Ashleigh Yule, Stephane Drai and Yaffa Tegegne, who provided me with assistance and input along the way. Finally, I would like to acknowledge my family who has always supported me throughout my quest for knowledge and to whom I will always be grateful.

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Chapter One: Introduction

Early intervention (EI) refers to a collection of systems, services, and supports for young children and families in need of assistance to achieve optimal development (Blackman, 2002; McCollum, 2002). Services may include the provision of assistance for the child in areas of cognitive, emotional, social, and physical functioning and systems of support developed to assist families to meet the needs of their child (Blackman, 2002). The goal of EI is to enhance developmental competence and prevent or minimize developmental delays (Blackman, 2002; Carpenter, 2005; Majnemer, 1998).

Children with developmental delays can be defined as having a specific congenital or acquired condition, delay, or who are at risk for meeting these criteria later in life, that affect the following areas of functioning: self-care, receptive and expressive language, learning, mobility, self-direction, capacity for independent living, or economic self-sufficiency (Developmental Disability Assistance and Bill of Rights Act, 2000). Early intervention is crucial for these children as the first three years of life provide the foundation for subsequent learning and development (Blackman, 2002). This is a period of rapid brain developmental when crucial neural connections are forming and children have the greatest advantage in terms of learning speed and neural plasticity (Blackman, 2002; McCain, Mustard, & Shanker, 2007).

Developmental timing is a critical factor influencing the success of EI programs. Children who receive EI services earlier in their developmental trajectory display greater short and long-term gains than children who receive services later in life (Ramey & Ramey, 1998; Woods & Wetherby, 2003). Program comprehensiveness, or the breadth of services available, also has a significant impact on child outcomes, with more

multidisciplinary or transdisciplinary programs having a greater impact than single service centres (McCollum, 2002; Ramey & Ramey, 1998).

Funding is another factor that has a significant impact on effective EI service delivery (Dworet & Bennett, 2002; McCaim et al., 2007). One of the major difficulties with EI programming across Canada is having adequate funds to provide appropriate services (McCain et al., 2007). In Canada, annual cost for EI programs can be upwards of $55,000 per child (Norris, Pare, & Starkey, 2006). It is important to note, however, that the economic benefits of providing appropriate EI services outweigh the costs (Currie, 2000; Parks, 2000; Simmermon, 2002). For example, Simmermon (2002) found that the average lifetime cost savings of providing EI can range from 50 to 75%, decreasing costs from an average of $2 million per child with autism to an average of $1 million.

Early intervention in Canada is left to provincial or territorial jurisdiction as the federal government does not mandate service provision or policy (den Heyer & Kienapple, 2005). Consequently, provinces and territories vary in their support of EI programs (Lyon, 2002; Sladeczek & Amar, 2005). A national, comparative analysis of EI programs across Canada has not been conducted in the field to specifically determine how provinces and territories differ from one another. Therefore, this study was conducted to compare provinces and territories across Canada on the aforementioned critical factors influencing EI program success. It was designed to identify best practices across Canada as well as gaps in service delivery.

The first goal of the study was to determine if and how provinces and territories across Canada differ in terms of EI service delivery for children and families with developmental delays. Variables that were compared included average wait lists (as they

impact developmental timing), funding, average number of EI professionals, satisfaction with program adequacy and child outcomes, perceptions of parent satisfaction, and satisfaction with government support. Provinces and territories were grouped according to time zone and each of the five resulting samples were compared on the aforementioned variables to determine if geographical differences exist in EI service delivery in Canada.

The second goal of the study was to examine relationships between EI variables, collapsing across provinces and territories, to determine general trends in Canadian EI programs. General research questions were posed as to whether relationships existed between: (a) wait time and parental satisfaction; (b) average number of services and parental and service provider satisfaction; and (c) source of funding and wait time. It was expected that parental satisfaction would decline as wait times increased, due to the superior effects when children begin services as early as possible (Ramey & Ramey, 1998; Woods & Wetherby, 2003). It was also expected that perceived parental and service provider satisfaction would increase as the average number of services provided at the centre increased, based on the aforementioned research regarding breadth of service delivery (McCollum, 2002; Ramey & Ramey, 1998). Finally, significant differences were not expected with child outcomes between publicly and privately funded centres as Canadian researchers have not previously found significant differences in wait times and satisfaction between public and private health services (British Columbia Ministry of Health, 2005).

Chapter Two: Review of the Literature

Early Intervention

Early Intervention (EI) programs are developed to target children with biological or environmental risks as well as those with established deficits (Blackman, 2002; Majnemer, 1998). Programs are designed to assist children develop skills in cognitive, emotional, social, physical, and adaptive domains (Blackman, 2002). Early intervention is based on the assumption that the early years are a time of critical importance for child development (McCollum, 2002). It is seen as best practice because the first three years of life provide a basis for the development of future skills and competencies and EI services help families and children receive the treatment and information necessary to facilitate optimal child development (Blackman, 2002; Eaves & Ho, 2004; Guralnick, 1998).

There are two overarching goals of EI, to enhance child development and to sustain and support the family (Bailey, Aytch, Odom, Symons, & Wolery, 1999; Blackman, 2002; Carpenter, 2005). In terms of the first goal, EI programs are developed to minimize and prevent cognitive, emotional, and physical limitations of children that have been disadvantaged by biological or environmental factors (Blackman, 2002). Secondly, EI service providers offer a variety of supports to families including, but not limited to, resource and information provision about the child's disorder or condition, training on techniques to help foster optimal development, education regarding the disorder, available supports and therapeutic interventions, and support groups to help parents better cope with the stressors associated with raising a child with special needs. Support is necessary in EI in order to decrease family and child stress, increase positive

child outcomes, and foster competence and self-confidence in family members (Blackman, 2002; Bruder, 2000; Carpenter, 2005; McWilliam & Scott, 2001).

A wide array of supports exists today for children and families in need of EI services (Guralnick, 2000; McCollum, 2002). Services tend to be cross-categorical, rather than disability-specific, and aim to prevent, improve, or remediate limitations related to a disability or delay (McCollum, 2002). Early intervention programs include services from numerous domains including assistive technology services, audiology, medical and nursing services, nutrition services, occupational therapy, physiotherapy, psychological and psychiatric services, special instruction (modified curriculum and instructional practices), speech pathology, social work and family services, transition services, and vision services (i.e., vision tests and assistive devices) (Autism Treatment Services of Canada, 2006; Individuals with Disabilities Education Act, 2004).

As well as offering a variety of services, EI centre staff must focus on a variety of domains of child functioning as multiple disabilities are common (McCollum, 2002). Early intervention encompasses a wide variety of activities, including family-centered practices, social integration in inclusive settings, participation in natural learning opportunities, parent-implemented teaching approaches, professional collaboration programs, parent education programs, and goal identification strategies (Odom & Wolery, 2003). Activities and program components vary as a function of the program, consequently, centres differ in the number and quality of programs.

Importance of Early Intervention

The importance of EI for young children is becoming more strongly advocated in the field by researchers and practitioners with the recognition of the significance of early neurological development (Blackman, 2002; McCain et al., 2007). As the brain grows rapidly in the first few years and crucial neural connections are forming, there is a credible biological basis for EI (Blackman, 2002; McCain et al., 2007). Also, infants and toddlers have an advantage in terms of learning speed and neural plasticity (Blackman, 2002). It is therefore of critical importance that programs begin in the child's formative years when early development is taking place (Blackman, 2002; McCain et al., 2007).

Through the *Early Years Study 2*, the Honorable Margaret McCain, Dr. Fraser Mustard and Dr. Stuart Shanker advocated the importance of intervention taking place in the early years. The authors provided a synthesis of information regarding early childhood development in Canada from a variety of fields. Although it was previously believed that the architecture of the brain was set from birth, it is now known that the first three years of life is a period of intensive synapse production in the brain (McCain et al., 2007). There is a definite interplay of nature and nurture in brain development (McCain et al., 2007). The changes in our conceptions regarding neural development have resulted from an explosion in the field of neuroscience in the past fifteen years, due in part to advancements in technology (McCain et al., 2007).

It is widely accepted that the provision of care and stimulation in this time period has a direct impact on neural wiring and positive interactions with adults and other children is essential for optimal child development (Blackman, 2002; McCain et al., 2007). The influence of the environment has enduring effects for the child. After this

critical period of development, it is difficult to achieve full neural potential (Blackman, 2002; McCain et al., 2007). Deprivation of optimal stimulation can lead to underdeveloped areas of the brain and cognitive abilities (McCain et al., 2007). Consequently, it is critical to give at least as much attention to the early years as is given to children of school age (McCain et al., 2007).

Early intervention in Canada has undergone significant changes in the past two decades as early childhood has been recognized as a critical developmental period through initiatives such as the 1999 Ontario *Early Years Study* and more recent 2007 *Early Years Study* 2. According to Guralnick (2000), twenty-five years ago, a comprehensive, coherent and responsive system of EI was not available for families and children in need of services. Services were limited, without meaningful integration or coordination and there was a shortage of well-trained professionals in the field. Parents were not consulted in service development and provision, services were not interdisciplinary, and an emphasis was placed on the child's differences, leading to social isolation and child and family barriers. Also, little appreciation was given to environmental stressors and their impact on the child's development. Fortunately, a much broader and comprehensive array of services exists today for children and families in need of EI services (Guralnick, 2000).

Early Intervention and Developmental Delays

The definition of developmental delay differs across Canada as a function of province or territory. According to L. Jarolimek from the Ontario *Ministry of Social Services* (personal communication, October 12, 2006), a developmental delay is a condition of mental impairment presenting during a child's formative years associated

with limitations in adaptive behavior. In British Columbia, a developmental delay is a condition, identified before 18 years of age, in which the child has an IQ of less than 70 and has functional limitations in two or more areas of adaptive functioning (Community Living British Columbia, 2006). In the United States, children are identified as having a developmental delay if they are between three and nine years of age and have a developmental lag in physical, cognitive, social and emotional, communicative, or adaptive development (Individuals with Disabilities Education Act, 2004). This definition extends the focus beyond deficits in adaptive functioning to include other areas, such as social, emotional, and communicative functioning.

The definition of developmental delay that is being used for this study includes components from both definitions because it is more inclusive. To summarize, "developmental delay" is being used to refer to children with a specific congenital or acquired condition, delay, or who are at risk for meeting these criteria later in life, that affect the following areas of functioning: self-care, receptive and expressive language, learning, mobility, self-direction, capacity for independent living, or economic self-sufficiency (Developmental Disability Assistance and Bill of Rights Act, 2000). We are looking specifically at children between 0 and 9 years of age who meet the aforementioned criteria as our focus is on early intervention.

Over 29,000 Canadian children, between 0 and 8 years of age, are profoundly affected by developmental delays (Statistics Canada, 2001). This is most likely an underestimate as children from the Yukon, Northwest Territories, and Nunavut were not included in the 2001 *Participation and Limitation Action Survey*, from which these statistics were obtained (Statistics Canada, 2001).

Effectiveness of Early Intervention

Short-term effectiveness. Although researchers differ in their definitions of effectiveness, EI services have been found effective for children with developmental delays (Bernhardt & Major, 2005; Chambers, Abrami, Massue & Morrison, 1998; Greenwald, Siegel, & Greenwald, 2006; Guralnick, 1998; Hanson, 2003; Smith, Buch, & Evslin Gamby, 2001; Webster, Feiler, & Webster, 2003). Some researchers have examined the effectiveness of multidisciplinary programs while others have looked interventions that target specific domains, such as language and communication.

For example, Chambers and colleagues (1998) evaluated the effectiveness of *Success for All,* a program developed by Robert Slavin and Nancy Madden at John Hopkins University in 1987 (Slavin & Madden, 2006). This program was developed to help children at-risk with early learning activities and strategies (Slavin & Madden, 2006). In 1998, Chambers and colleagues used the Success for All, targeting children at-risk for reading delays in inner city schools. In this particular study, there was a special needs population of approximately 40%, including children with developmental delays (Chambers et al., 1998).

One hundred and twenty-eight children received EI services including developmentally appropriate kindergarten programming targeting language and reading skills, reading achievement assessments every eight weeks, individual daily tutoring, a family support team, and eclectic reading programs (Chambers et al., 1998). The remaining 128 children served as controls using the whole language approach mandated by the Quebec Ministry of Education, Leisure and Sport (Chambers et al., 1998).

Children in the EI program had significantly higher reading achievement scores than control students as measured with the Woodcock Johnson and Durrell tests of reading.

In 1998, Guralnick looked at the effectiveness of EI in improving cognitive development based on IQ scores. Based on an analysis of relevant EI literature, Guralnick concluded that the typical decline in intellectual development without services in the first five years of life can be prevented with appropriate EI service provision. It was also found that the decline that typically occurs in children with Down Syndrome between 12 and 18 months of age can almost be entirely prevented with EI programming (Guralnick, 2000). In his review of the literature, Guralnick (1998) found positive effects in terms of intellectual ability for children with biological and environmental risks in a wide variety of intervention programs that employed different approaches. For example, there was an average effect size of .62 for cognitive development measures for children who participated in EI programs between 0 and 3 years of age (Guralnick, 1998).

Early language and communication interventions have shown short-term benefits. In 2005, Bernhardt and Major looked at the effects of a phonological and metaphonological intervention program on speech, language, and literacy skills. Children in the intervention group showed significant gains in phonology (speech production skills and intelligible conversation) and many gains in metaphonology (rhyme, alliteration production and consonant deletion) at a three year follow-up compared to children that did not participate in the language intervention (Bernhardt & Major, 2005).

In 2004, Ramey and Ramey looked at the impact of EI on early learning and school readiness. Results from their previous EI study, the Abecedarian Project or ABC Study, were analyzed. When the study was launched in 1977, 111 children deemed "high-

risk" were provided with basic nutrition, health, and social services. Half of the children were also enrolled in a specially created preschool program, *Partners for Learning,* which provided full-day programming, five days a week for 50 weeks of the year up until entry into kindergarten (Ramey & Ramey, 2004). The program's curriculum is based on developmental theory and empirical evidence regarding how infants and toddlers learn. Five hundred activities are specified for teachers in various domains (i.e., cognitive, social, fine motor, language) and teachers are instructed on how to individualize programs for each child. A special language curriculum is also used to emphasize pre-reading and conversational skills.

Individual cognitive assessments were used as dependent measures in this study. At eighteen months of age, children who were enrolled in *Partners for Learning* performed above the national average whereas children who did not take part in the preschool program performed at the low end of the normal range (Ramey & Ramey, 2004). This was measured using the Bayley Developmental Quotient. Two other developmental assessments (Stanford Binet IQ and McCarthy General Cognitive Index) were administered throughout the remaining preschool period. It was found that children in the *Partners for Learning* group scored approximately 14 points higher than the control group. The effect sizes for children between 18 and 52 months of age ranged from 0.73 to 1.45, with an average effect size of 1.08 (Ramey & Ramey, 2004).

Long-term effectiveness. Although numerous researchers have found support for the effectiveness of EI in the short-term, critics argue that there is little evidence of long-term effectiveness (Guralnick, 1998; Guralnick, 2000). Few longitudinal studies have been conducted and once intervention efforts are stopped, gains are often lost (Guralnick,

1998; Ramey & Ramey, 1998). Modest effects have been cited in longitudinal analyses, such as less frequent grade retention, however, long-term effects have been more difficult to document than short- term effects , due in part to attrition rates, natural developmental improvements over time, and complexities of study implementation and continuation (Guralnick, 2000; Guralnick, 1998). Some researchers have, however, found positive longitudinal benefits for EI (Ramey & Ramey, 2004; Hanson, 2003; Currie, 2000).

The previously mentioned *Success for All* model has also been implemented by numerous researchers to examine the long-term effectiveness of the program (Borman & Hewes, 2003; Madden, Slavin, Karweit, Dolan, & Wasik, 1993; Slavin & Madden, 2001; Slavin, Madden, Cheung, Borman, Chamberlain, & Chambers, 2006). In 2001, Slavin and Madden investigated the long-term effects of the Baltimore study in which the *Success for All* model was implemented with first grade students. Half of the sample in cohort took part in the *Success for All* program, an intensive early intervention that was designed to resolve learning problems that are detected early through reading programs, individual tutoring, and cooperative learning methods (Slavin & Madden, 2001). Average reading grade equivalents were used as the outcome measure for the study. Slavin and Madden (2001) found that children from the *Success for All* program scored one grade equivalent higher than control children in Grade Six and Seven, once students were no longer attending programming. Similarly, Borman and Hewes (2003) found that average grade equivalents were significantly higher for children that took part in *Success for All* even in Grade eight. Significant reductions in special education placement and grade reductions were also found for the intervention group (Borman & Hewes, 2003).

In a separate line of longitudinal research, Hanson (2003) investigated the enduring gains of children and families with Down Syndrome who took part in an EI program. Children and families that participated between 1974 and 1977, around the time of the implementation of the *Education of All Handicapped Children Act*, were interviewed. Outcomes were analyzed in terms of both child outcome and parent satisfaction. Nine of twelve original participants were employed and somewhat independent twenty-five years after EI programming took place. For example, they were able to cook, clean, and take public transit. For the families, EI had acted as a lifeline of hope and support, with all parents reporting that services were one of the most fundamental supports, providing a positive yet realistic set of expectations for the family (Hanson, 2003).

As well as investigating the short-term effects of EI programs for high-risk children, Ramey and Ramey (2004) looked at the enduring effects of the Abecedarian (ABC) Project in the school years. It was found that children who received high quality early childhood services (*Partners for Learning* program) obtained significantly higher reading and math scores than those who did not take part in the program (Ramey & Ramey, 2004). Students in the *Partners for Learning* group were also less likely to be placed in special education or held back in school (Ramey & Ramey, 2004). Fifty-six percent of control students were retained at least once in school by 15 years of age whereas only thirty percent of children from the *Partners for Learning* group were retained. Also, by age 15, 48% of children in the control group were placed in special education whereas only 12% of the treatment group received special services (Ramey & Ramey, 2004). Participants from the ABC Project were also followed into adulthood.

Seventy-percent of individuals from the treatment group held skilled jobs and the majority continued to show higher IQ, reading and math achievement scores than the control group (Ramey & Ramey, 2004).

Positive long-term effects were also found from the *Early Training Project* (Currie, 2000). This program served four and five year olds with weekly home visits throughout the year and a ten-week, part-time preschool program for two to three summers. During home visits, skilled professionals with a background in preschool education and social work met in the home with mothers for approximately one hour per week (Gray, 1971). Materials were brought into the home for the child and mothers were taught to use them effectively (Gray, 1971). Children who took part in this EI program showed significant reductions in subsequent special education placement when compared to children that did not take part in the program. Specifically, only five percent of the EI group was placed in special education, versus 29% of control students (Currie, 2000).

One of the most famous longitudinal studies of EI is the *Perry Preschool Project* (Schweinhart, Barnes, & Weikart, 1993). Children in this study took part in a half-day preschool five days a week and received 90 minutes of home visitation per week. Teachers visited the homes to help the mother implement the curriculum at home and involve her in the educational process. This occurred for eight months of the year for two years. There were small teacher-to-student ratios and all teachers had child development training and a Master's degree. Long-term positive effects were found in terms of grades, high school graduation rates, achievement test results, earnings, and lower rates of welfare use and crime. Despite the positive outcomes in the *Perry Preschool Project* and

other longitudinal EI studies, little remains known about the long-term effects of EI and more longitudinal research is necessary (Ramey & Ramey, 1998).

Factors Contributing to Early Intervention Effectiveness

A great deal of research has been conducted on factors contributing to the effectiveness of EI programs. From a broad perspective, EI programs must first have clearly identified goals and a consistent means of evaluating program components (Bailey et al., 1999). Programs that focus on eliminating risk factors, enhancing opportunities for the child and family, and promoting resource access are most effective (Bailey et al., 1999). In the following section, critical characteristics of effective EI programs will be described.

Family involvement. One of the most prominent findings in the literature is that effective EI programs must involve and support the child's family (Blackman, 2002; McCollum, 2002; Webster, Feiler, & Webster, 2003). Early learning is not solely a function of the child but also involves the environment (Bruder, 2002; Carpenter, 2005). Family involvement is essential as the family provides the primary nurturing context and is critical for learning and development (McCollum et al., 2001; Odom & Wolery, 2003).

Parents are better able to understand and respond to the needs of their child if they understand their child's perspective (McCollum et al., 2001). Early intervention programs that foster competence and confidence on the part of the family make them better able to assist their children with special needs (McCollum et al., 2001). As social support moderates the effects of developmental delays and families tend to remain a major part of their child's life throughout developmental progressions, it is necessary to help foster a sense of competence with parents (Bruder, 2000). In order to foster competence (and

subsequent parent involvement), parents must be given information in a supportive way, allowing them to feel competent and confident in the partnership (Bruder, 2000). It is also necessary to be sensitive to the varying degrees of involvement between families, which is dependent not only on the specific intervention but also on family circumstance (Gallagher, Rhodes, & Darling, 2004).

Family-centered models of service delivery are prominent today, with parents and professionals serving reciprocal functions, including the provision of support, advice, and information (Carpenter, 2005). In Canada, family involvement is seen as best practice and recommended by various organizations, however, it is not mandated by law. Despite this, family involvement in the development of Individualized Education Plans and other relevant programs for children at school and in early childhood programs is common in Canada (Zinga, Bennett, Good, & Kumpf, 2005). Each provincial and territorial *Education Act* supports parental involvement in both assessment and service provision (Zinga et al., 2005).

Service coordination and comprehensiveness. Another factor that has been found to be crucial in effective EI service provision is service coordination. Service coordination provides a means of systematically assisting parents to obtain the services and resources they require by integrating services from various providers to establish links and improve service provision (Park & Turnball, 2003). It is based on the assumption that integrating various service components is better than keeping services isolated and separate, putting the demand on parents to combine services to comprise a comprehensive service plan (Dunst & Bruder, 2002). The issue of fragmented formal and informal support has been noted as having a negative impact on EI services for children

with developmental delays (Dunst & Bruder, 2002; Guralnick, 1998; Park & Turnball, 2003). When services are fragmented and service providers do not communicate, there can be unnecessary overlap of services, resulting in wasted time and money (Kyle, 2000; Park & Turnball, 2003). Fragmented systems are also difficult for parents to navigate, resulting in frustration, confusion and gaps in service delivery (Kyle, 2000). Service systems need to be integrated to support children and families with special needs by ensuring all beneficial services are available to them and that supports are attained efficiently (Dunst & Bruder, 2002; Kyle, 2000).

Coordinated programs are optimal because they address the needs of the child, parents and practitioners (Dunst & Bruder, 2002; Guralnick, 2000; Johnson & Mathien, 1998; Park & Turnball, 2003; Ramey & Ramey, 1998). Key stakeholders in Canadian policy discussions have addressed the need for coordinated services for children in early childhood programs (Johnson & Mathien, 1998). Integrated services between families, service providers and professionals are essential to providing effective EI programs (Bailey, 1998; Park & Turnball, 2003). No single agency or discipline can meet all the child and family's needs, therefore, a transdisciplinary team is essential whereby a variety of professionals from different fields, (such as psychology, speech pathology, and occupational therapy) work together to plan the intervention (McCollum, 2002). Similar to a multidisciplinary team, a transdisciplinary team is composed of professionals from a variety of disciplines, however, a transdisciplinary team is unique because team members teach and learn across their disciplinary boundaries, integrating knowledge from a variety of domains (McWilliam, 2000). In a multidisciplinary approach, each professional focuses on their particular area of expertise but in a transdisciplinary approach, one

primary service provider integrates information and expertise from all intervention domains (McWilliam & Scott, 2001). Through transdisciplinary programming, role release occurs, with service providers teaching each other their specific functions and sharing responsibilities (McWilliam & Scott, 2001).

A wide range of services must be coordinated to support optimal child development and enhance family success (Kyle, 2000). Effective service coordination leads to many benefits for children and families, including more efficient access, better flow of information, increased service quality and supports, greater availability of funding, improved relationships, family empowerment, and improved child outcomes (Dunst & Bruder, 2002; Park & Turnball, 2003; Ramey & Ramey, 1998).

There are both structural (agency) and interpersonal (relational) factors that impact service coordination (Park & Turnball, 2003). Interpersonal barriers include lack of knowledge, cultural differences, beliefs, limited interpersonal skills, and a lack of professional expertise. Structural barriers can include lack of managerial support, poor communication, vague ground rules, insufficient time, caseload constraints, scheduling issues, and confidentiality policies (Park & Turnball, 2003). In order to address the above concerns, Park and Turnball (2003) developed a variety of recommendations for implementing service coordination. It is suggested that training take place to educate professionals and parents about perceived limitations to service coordination (such as different value systems, limited funding, and organizational regulations) and how potential barriers can be overcome. System change is required for effective service coordination. Changes such as service co-location, pooled funding, and centralized

information systems would better allow for the occurrence of service coordination (Park & Turnball, 2003).

Service integration and coordination is difficult in Canada because it is such a diverse, multicultural country. Service coordination is easiest for small, homogenous countries as consensus regarding policy is achieved more readily (Kyle, 2000). However, many provinces have made significant gains in terms of service coordination in EI programs. In Alberta, for example, Community Resource Centres provide EI services with multi-service teams (Kyle, 2000). Also, several provinces, including Ontario, Alberta, and British Columbia have inter-ministerial collaboration policies for EI service provision to enable service coordination at a provincial level.

To be optimally effective, EI programs must be comprehensive, involving a breadth of services and supports from various disciplines that must be coordinated efficiently as mentioned above (Ramey & Ramey, 1998). For example, programs involving speech language pathology, psychology, social work and occupational therapy tend to have greater benefits than programs offering just one program or service (Ramey & Ramey, 1998).

Developmental timing. Another key factor in effective EI programming is the principle of developmental timing. Children who receive EI services earlier and for longer periods of time display greater gains than those who receive time-limited services later in life (Ramey & Ramey, 1998). High-risk children must be identified early and services must begin as soon as possible (Blackman, 2002; Carpenter, 2005; Guralnick, 1998; Majnemer, Shevell, Rosenbaum, & Abrahamowicz, 2001). Researchers in child development have indicated that learning and development are most rapid in the

preschool period, therefore, intervention must begin as early as possible to enhance development, support and assist the family, and maximize their outcomes in Canadian society (Baxter & Kahn, 1999). In 2003, Woods and Wetherby found that children with developmental delays who began intervention programs before three years of age made significantly greater gains than those who started after five years of age.

Although EI is critical for children with developmental delays, not all children eligible for services are identified early (LaParo, Olsen, & Pianta, 2002). In 1997, Palfry and colleagues found that only 16% of 1,700 children from their special education sample (Kindergarten to Gr. 6) were identified before three years of age and only 29% were identified prior to their fifth birthday (Palfry, Singer, Walker, & Butler, 1997). For the majority of children with developmental delays, there are not clear indicators and identification often takes up to seven years when there isn't apparent physical evidence of a problem (La Paro et al., 2002). It is therefore essential to continue research into early screening, assessment, and diagnosis of children with developmental delays.

Other critical factors. Although they have received less attention in the EI literature, several other factors have been associated with effective EI including individualized programming, high intensity and duration, direct learning experiences, flexibility, cultural congruence, and level of child functioning (Blackman, 2002; Eaves & Ho, 2004; Guralnick, 1998; Guralnick, 2000; McCollum, 2002; Ramey & Ramey, 1998; Webster et al., 2003). In terms of individualized programming, it is critical that EI programs match the specific needs, goals, and characteristics of both the child and the family (Guralnick, 1998; Odom & Wolery, 2003). A second characteristic impacting the effectiveness EI programming is program intensity. Programs should be intense in terms

of both duration and frequency of sessions, for example, offering 25 to 40 hours of intervention across five days a week (Guralnick, 1998; Ramey & Ramey, 1998). Thirdly, direct learning experiences, where the child receives the intervention have been shown as more effective than intermediary approaches, such as parent training or education, however, a combination of direct intervention and parent training can be very effective as well (Brink, 2002; Bruder, 2000; Guralnick, 1998). Flexible programs, that modify and adapt interventions on an ongoing basis, also have better outcomes than rigid programs (Childress, 2004; Ramey & Ramey, 1998). It is also important to consider cultural congruence, or how well the intervention will fit with a particular cultural group, when developing an intervention plan (Hays, 2001; Ramey & Ramey, 1998; Rogers & Lopez, 2006). Interventions that fit the group effectively will have greater impact than those that do not incorporate cultural variables (Hays, 2001; Ramey & Ramey, 1998). Finally, children with higher initial levels of cognitive functioning show greater levels of improvement than those with lower cognitive abilities (Eaves & Ho, 2004; Howlin, Goode, Hutton, & Rutter, 2004).

Assessing Early Intervention Program Effectiveness

There has been an intense debate around the effectiveness of EI programs (Carpenter, 2006; Hendriks, 2001; Guralnick, 1998). As EI studies differ in target populations, length, and intervention quality, it is more prudent to say that the effectiveness of intervention depends on the specific variables of each case than claiming more broadly that EI is "effective" (McCollum, 2002). Trying to assess whether or not EI programs are successful is a monumental task that is made difficult by the wide array of services and programs that constitute EI (Bailey et al., 1999; Carpenter, 2006). It has

been suggested that smaller, controlled studies that focus on specific interventions and circumstances be validated and the results be compiled thereafter (Bailey et al., 1999).

Even well-designed, small scale studies are difficult to develop as there are so many dimensions to EI and ethical restraints, such as the issue of using children as control subjects not receiving EI services (Blackman, 2002). It is also important to note that the benefits of EI differ from child to child and without environmental maintenance, or the continuation of intervention efforts over time, the effects will likely diminish (Commission on Behavioral and Social Sciences and Education , 2002; Ramey & Ramey, 1998). Also, labels of effectiveness should go above and beyond traditional outcome measures, such as IQ, and look at gains in social emotional domains, initiation and generalization of skills with other people and in other environments outside of the program (Woods & Wetherby, 2003).

Persistent benefits of EI tend to be socially-based while cognitive and motor gains are often more transient (Blackman, 2002). Persistent benefits tend to be in the social domain, for example, fewer instances of crime and teen age pregnancy later in life and a lower incidence of high school drop out when EI services are provided to children at risk or with delays (Blackman, 2002). A larger focus should consequently be placed on the impact of EI on social-emotional functioning and development.

Barriers to Early Intervention

Several barriers to effective EI programs have been identified in the literature. Although not exhaustive, difficulty translating research into practice and individualizing interventions, inconsistency between programs, and limited qualified personnel are the barriers that will be discussed in the subsequent section.

Translating research to practice. A significant barrier in the field of EI is translating what has found to be effective in the research community into actual clinical practice (Campbell & Halbert, 2002; Guralnick, 1998). Early intervention service providers should consider what is presented in the empirical literature as well as what is best for the child and family (Noyes-Grosser, Holland, Lyons, Holland, Romanczyk, & Gillis, 2005). Research regarding the components and contexts of EI that are helpful for children and families is necessary to move practice forward (Webster et al., 2003). There can be several obstacles that make this process difficult including limited access to literature, insufficient time for team development to explore empirical literature and discuss how to apply findings to practice, and reluctance to monitor child outcomes (Campbell & Halbert, 2002; Odom & Strain, 2002).

In 2000, Guralnick identified two key areas in which a lag in implementing research into practice exists, family-centered therapy and individualized interventions. First, although family-centered practices have been shown to be most effective in the literature, it has been difficult for practitioners to shift from the child to family-centered model of service delivery (Bruder, 2000; Guralnick, 2000). It is difficult not only to change practitioner roles but also to encourage family involvement and interagency collaboration (Guralnick, 2000). It can be difficult to elicit family involvement due to cultural differences (Weiss, Caspe, & Lopez), education (Curtis & Nirbhay, 1996), and parent perceptions that their opinions are not being respected (Shannon, 2002). Also, lack of service coordination makes it difficult for families to determine and prioritize what services they require for their child and family and how and where to access services.

Professionals have also voiced concerns about time, resources and parents having insufficient capacity or knowledge to contribute effectively to the program plan (Shannon, 2002). There is a concern by some professionals that parents do not have the background knowledge, training, resources, or time to contribute to their child's intervention (Shannon, 2002). Both families and professionals felt that parents were not fully informed of all possible services and there was concern regarding physicians taking a "wait-and-see" approach. Family and personality factors were also perceived as facilitators or barriers in family-centered service (Shannon, 2002). Families that were not highly motivated, tenacious, or persistent were less likely to receive services than outspoken parents that acted as advocates for their children (Shannon, 2002).

In Canada, a shift towards family-centered practices is in motion. Although there is still work to be done, an increased emphasis on the empowerment of families in EI programming has been rising since the 1990's (Dworet & Bennett, 2002; Jordan, 2001; Ontario Association of Infant Development, 1994 need more recent references here and not only from Ontario). Family-centered practices are the norm in EI services in Canada despite the fact that they have not been legally mandated (Ontario Association of Infant Development, 1994 ditto here).

Individualizing interventions. Second, although individualizing interventions based on the child's specific strengths and needs is seen as best practice, this is not prominent in practice (Guralnick, 2000; Guralnick & Albertini, 2006). The necessity of individualized interventions is becoming more pronounced as the population is becoming more diverse and multiple risks are more frequent (Guralnick, 2000; Ontario Association of Infant Development, 1994). Not only are children's needs dependent on their specific

delay, they are also dependent on their family and environmental circumstances, including financial and social resources (Dworet & Bennett, 2002; Ontario Association of Infant Development, 1994). To be effective, EI service providers must be sensitive to the culture, values and unique perspectives of rapidly changing families in Canada (Ontario Association of Infant Development, 1994). Families and children in Canada are unique and require a flexible and individualized approach to the identification of EI goals and service planning (Dworet & Bennett, 2002; Ontario Association of Infant Development, 1994).

Costs and funding. It is not surprising that another major limitation to effective EI service provision is limited funding. Fiscal restraint is becoming a bigger obstacle in educational programming for children with a wide variety of special needs (Dworet & Bennett, 2002). This could be due, at least in part, to the increasing prevalence rate of developmental delays, such as autism (Centres for Disease Control and Prevention, 2007).

In Canada, children from 0-18 years of age receive $17 billion annually for educational provisions, however, the majority of funding is provided during the school years, after the aforementioned critical period of brain development (McCain et al., 2007). Children under six receive only $2,800 annually while children between six and eighteen years of age receive $7,250 annually (McCain & Mustard, 1999). It is important to note that long term economic societal gains are made by investing in the early years, therefore, more funding must be made available for children from birth to six years of age (Blackman, 2002; Carpenter, 2005; Guralnick, 1998; Majnemer et al., 2001; McCain et al., 2007; Ramey & Ramey, 1998; Woods & Wetherby, 2003; Palfry et al., 1997).

One of the major difficulties with EI service provision is having adequate finances to provide appropriate programs. Effective EI programs are usually extremely expensive. For example, the cost of Early Intensive Behavioral Intervention (EIBI) programs for children with autism spectrum disorders at the St. Amant Centre in Manitoba is $57,000 per child, per year (Norris, Pare & Starkey, 2006). In Quebec, it can cost up to $55,000 for EI personnel alone depending on program intensity and staff requirements (Norris et.al, 2006).

It has, however, been found that, despite the high costs of EI, the long-term benefits far exceed the program costs (Currie, 2000; Jacobson, 1998). As cited in McCain et al. (2007), James Heckman and Flavio Cunha demonstrated that early childhood is a period of unequivocal development of human capital. They calculated that the return on investments in early child development programs is 8:1, in contrast to a return of only 3:1 in the primary and secondary years.

Early intervention can substantially decrease the need for specialized and rehabilitative services later in life (Jacobson, Mulick, & Green, 1998; McCain et al., 2007). In 2002, Simmermon examined the economic costs and benefits of providing appropriate intervention services for children with autism spectrum disorders (ASD). The average lifetime cost for a person with an ASD is estimated at $2 million (Simmermon, 2002). With accurate early diagnosis and effective supports and interventions, the lifetime cost savings can range from 50 to 75%, decreasing costs to an average of $1 million per person with autism in Canada (Simmermon, 2002).

Cost-benefit analysis research is also being conducted throughout the United States. For example, based on analyses of the *Perry Preschool Project*, it was concluded that for

every dollar invested in EI, a subsequent return of $7 was made by reducing grade retention, drop out rates, and special education placement (Currie, 2000). By 27 years of age, children who had participated in the project had higher earnings than control children. More specifically, 29% of individuals who received EI services had earnings over $20,000 per year whereas only 7% of the control group fell in this earning bracket. It was also found that individuals who received EI services were more likely to own homes in the future. Thirty-six percent of the EI sample owned their own home versus thirteen percent of individuals that did not receive EI services.

Parks (2000) also conducted an analysis of the long-term cost benefits of EI service provision based on the *Perry Preschool Project* data. It was found that individuals who received EI services were more likely to graduate high school than control students (71% vs. 54%, respectively) and fewer children who received EI services were subsequently placed in social services (59% vs. 80%, respectively). Finally, fewer arrests were made by 27 years of age for children in the EI group. Only seven percent of the EI group was arrested five or more times versus 35% of the control group.

A cost-benefit analysis of the *Chicago Parent Child Center* (CPCC) was also conducted (Reynolds, Temple, Robertson & Mann, 2002). This center-based EI program provided family and educational support for children three to nine years of age in neighbourhood schools. There are currently 23 centers in Chicago. Reynolds and colleagues found that the CPCC program provided a return of $7.14 for every dollar invested. This benefit-to-cost ratio was attained through a decrease in special services, reduced criminal justice systems and welfare expenditures and increased economic well-being (Reynolds et.al, 2002).

Program inconsistency. Early intervention programs offer a wide array of activities to children and families (Ramey & Ramey, 1998). Another barrier to EI is that there is tremendous variation in terms of services and practices in EI as programming is not standardized (Ramey & Ramey, 1998). The field of EI has yet to develop a common language and interventions differ to such an extent that they are quite difficult to compare (Ramey & Ramey, 1998). The broad range of services and goals in the field also contribute to the complexity in program development and assessment (Bailey et.al, 1999).

Limited qualified personnel. A final barrier to effective EI that is apparent in the literature is a lack of qualified professionals available to work in the field. Researchers have found a lack of professionals qualified to work with children with disabilities between 0 and 5 years of age in North America (Stayton, Whitaker, Jones & Kersting, 2001). For example, the Autism Society of Canada (2005) reported that there are only a limited number of professionals in Canada qualified to work with children with autism and other developmental delays. In general, there is a significant shortage of qualified staff that supports the educational and developmental needs of children with developmental delays (Frankel, 2004; Killoran, Piazza, Templeman, Peters, & Udell, 2001; Malone & Straka, 2005; Stayton et al., 2001)

In the U.S., universities have reported an unwillingness to change programming or develop new programs to train students to work with children with autism spectrum and other developmental disorders (Stayton et al., 2001). Existing staff indicate that new personnel rarely have the skills necessary to deal with professionals in other disciplines or domains due to limitations in exposure and training (Stayton et.al, 2001). Training programs, such as the Interdisciplinary Early Childhood Education (IECE) program,

developed by Western Kentucky University, could alleviate these concerns by providing appropriate training for working with children with special needs and preparing students for future careers with young children with disabilities (Stayton et.al, 2001).

Since 2000, Canadian universities have begun to implement programs providing direct training for working specifically with individuals with developmental disabilities, including ABA training (Autism Society of Canada, 2005). Qualifications for EI workers are starting to become more stringent in Canada. For example, in Nova Scotia, an early interventionist must have a degree in special education, early childhood care and education, physical or occupational therapy, psychology, nursing or speech language pathology from a recognized educational institution (den Heyer & Kienapple, 2005).

Future Directions in Early Intervention

Although the "first generation" of EI has provided families, children, and practitioners with significant contributions, there are still many issues to address in the field (Guralnick, 2000; McCollum, 2002; Sladeczek & Amar, 2005). Some significant contributions to date include the expanding breadth of services available from different professionals in the field and a great deal of empirical research on EI services (Guralnick, 2000). Many issues however, still need to be addressed before an accessible, integrated, and inclusive system is available for all children and families in need (McCollum, 2002).

Future directions must involve gaining further knowledge through research and enhancing EI systems through subsequent program development (Guralnick, 2000). Practitioners must remain abreast of the literature and incorporate empirical findings into practice (Campbell & Halbert, 2002; Guralnick, 2000; McCollum, 2002). Guralnick (2000) said that it is necessary to adequately implement research-based findings into

clinical practice. Also, since long-term effects have been so hard to document, further research in this area is critical for future EI endeavors. Another crucial and complex problem to undertake in the future is to ensure that programs are individualized to match both the needs of the child and family (Guralnick, 2000; Guralnick & Albertini, 2006). A knowledge base strong enough to accomplish this undertaking is not yet available. Therefore, to maximize resources and optimally individualize programs, further research is necessary. Currently, EI decisions are often made based on personal preferences instead of on the basis of empiricism (Guralnick, 2000). We also need to learn more about optimal and efficient ways of blending goals and strategies for children and families across several environments (McCollum, 2002).

The Canadian Early Intervention Research Team, spear-headed by Dr. Ingrid Sladeczek in collaboration with Daniel Amar, Research Director of Yaldei Developmental Centre, has recognized the current limitations in the field and is working to facilitate a national paradigm shift whereby service delivery frameworks across Canada are consistent, effective, appropriate, and accessible (Sladeczek & Amar, 2005). In order to facilitate such a shift, the team is working to identify critical success factors, best practices, and gaps in service delivery through this national EI inventory and also through consultation with policy makers and key stakeholders from across Canada (Sladeczek & Amar, 2005). It is widely accepted that a consensus does not exist in Canada for children and families with developmental delays and, in order for service delivery and outcomes to improve, a shift must take place in the current system or service delivery and supports and policy makers must be actively involved for this to take place (Sladeczek & Amar, 2005).

Early Intervention Policy

It is evident that EI programming is largely influenced by political and financial factors (Lyon, 2002). Service provision is largely based on public policy, therefore, it is essential to examine related health care and social policy. Health care priorities are largely determined by political considerations, often more so than empirical findings (Hunsley & Crabb, 2004). Significant and wide-spread political support is therefore critical in providing effective EI services for children and families with developmental delays. Early intervention services are crucial for children and society as a whole as improving the future success of children will have a positive impact on Canada's economic well-being. These children will be the future leaders and innovators in society and lead the future socioeconomic success of Canada (McCain & Mustard, 1999).

Too many children fall through the cracks because the supports to help them succeed do not exist or are not available (Dworet & Bennett, 2002; McCain & Mustard, 1999). Children are often subjected to long wait lists and fall further behind while awaiting appropriate services (Dworet & Bennett, 2002; McCain & Mustard, 1999). Personnel are also often unequipped with the necessary resources to help these children (Bagdi & Vacca, 2005). It is imperative that policy be changed to support children with delays and that initiatives focus on the child within the family context (Bagdi & Vacca, 2005). Parents, professionals, policy makers, legislators and advocates must attend to the supports required to meet the needs of all children and efforts must be driven forward by collaboration and sustained over time (Bagdi & Vacca, 2005). It is essential to move from a focus of whether or not to intervene to how to intervene and for which children and families (Bailey et.al, 1999; Malone & Denno, 2003).

Policy and practice in Canada

The following section will first address the available research on EI services in Canada. Due to the limited nature of this research, subsequent information will also be provided on Canadian special education policy. Although not exclusive to developmental delays, special education in Canada includes children with developmental delays and is therefore applicable to the current population.

Early intervention in Canada. Early intervention programs in Canada are left to provincial or territorial jurisdiction (den Heyer & Kienapple, 2005). The federal government does not mandate policy or EI service provision in Canada. Although there is no federal legislation that guides EI services in Canada directly, the *Canadian Charter of Human Rights and Freedoms* provides a set of applicable rules that must be abided by in each province (den Heyer & Kienapple, 2005). Article 15 of the Charter prevents discrimination based on mental or physical disability (den Heyer & Kienapple, 2005).

Although not federally mandated, the federal government does provide support for EI services and initiatives at the level of policy (den Heyer & Kienapple, 2005). For example, *Health Canada* funds the *Centre of Excellence for Children and Youth with Special Needs*, which in turn provides opportunities for development and research in the field of EI (den Heyer & Kienapple, 2005). The Centre was developed in 2000 to ensure that children with special needs living in northern and rural communities receive the best services that Canada has to offer (Centre of Excellence for Children and Adolescents with Special Needs, 2006). Specific programs, including EI services, are provided to these communities respecting their cultural and linguistic uniqueness. Early intervention programs are offered for children 0-6 years of age based on best practices and offering

new technologies that would not otherwise be available (Centre of Excellence for Children and Adolescents with Special Needs, 2006).

Early intervention service providers in Canada are commonly independent, non-profit organizations that develop programs in response to community needs (Lyon, 2002). The grass roots approach is beneficial because specific community needs can be met and resources can be adapted, however, a consequence of this approach is the lack of a coordinated, national, high-quality EI system in Canada (den Heyer & Kienapple, 2005; Lyons, 2002).

Canadian provinces vary widely in their support of EI programs. For example, in British Columbia, one-third of the costs are covered until the child turns six years of age (Sladeczek & Amar, 2005). In Quebec, some therapies are funded but services are fragmented and waitlists are long (Sladeczek & Amar, 2005). Alberta, Ontario and Prince Edward Island cover some costs but many expenses fall on the parents (Sladeczek & Amar, 2005). There is not a coherent national policy or well- established set of guidelines to assist health care professionals, authorities and parents in Canada evaluate programs or outline best practices (Sladeczek & Amar, 2005).

In 2002, Lyon reported on concerns relating to EI that are reported by individuals of various provinces across Canada. There is a consensus that there is insufficient information and data for program planning, definitions surrounding important terms are too variable (even within provinces) and communication between service providers is infrequent and insufficient (Lyon, 2002). Although a great deal of success has been made in terms of EI policy in Canada, gaps in service delivery exist and a strong, government-wide mechanism for accountability is essential (Prince, 2004). Current gaps or limitations

in EI service delivery in Canada include limited information, financial constraints, federal and provincial jurisdiction issues, and lack of robust accountability mechanisms leading to a fragmented system of services and supports across the country (Prince, 2004; den Heyer & Kienapple, 2005; Sladeczek & Amar, 2005). Policy needs to be scrutinized by disability advocates and scholars in disability research to enable full participation in society for all individuals with disabilities in Canada (Prince, 2004).

Special education in Canada. Special education policy in Canada is also controlled by each province or territory, resulting in several differences in service structure and provision across the country (Dworet & Bennett, 2002; Friendly, Beach, & Turiano, 2002). The federal government does not pass legislation mandating policies in education (Frankel, 2004). In each province or territory, a Ministry or Department of Education administers the *Education Act* to which locally elected school boards must adhere (Dworet & Bennett, 2002). In each province or territory, the Act supports inclusion (as the first choice), parent involvement (for placement and assessment), individualized programming and an appeals procedure for parents (Zinga et al., 2005).

Even within a province or territory, fiscal responsibility for children with special needs is spread among various departments and ministries (Lyon, 2002). In terms of provincial and territorial education systems, some provinces have clear policies but difficulty implementing them while others have vague policies from the start (Zinga et.al, 2005). There are differences across the country in terms of how legislation addresses special education, how policy conceptualizes special education and how policies are implemented into practice (Zinga et.al, 2005). In general, all provinces struggle in terms

of special education services to a certain degree, however, improvements are being made across the country (Zinga et.al, 2005).

Provinces and territories tend to differ in several ways from one another in terms of special services and education for children with special needs. Definitions of exceptionality and corresponding eligibility criteria differ across the country (Dworet & Bennett, 2002). In the Northwest Territories, for example, there is no definitional list of exceptionalities as it is believed that all children deserve inclusion and support is not dependent upon diagnoses (Dworet & Bennett, 2002). In Ontario, however, diagnoses or codes are required to receive funding (Dworet & Bennett, 2002). It is often the case in Canada that a child may be eligible for service in one geographic location but can lose eligibility by moving from one region to another (Dworet & Bennett, 2002).

Although funding is for the most part based on needs across Canada, the way in which funding is assessed can also differ from one jurisdiction to another (Dworet & Bennett, 2002). In Quebec and British Columbia, funding is based on both the category and degree of disability while Ontario bases decisions on regular review of *Individual Education Plans* (Dworet & Bennett, 2002).

Although there are several differences in terms of special education programming across Canada, several similarities exist. For the past two decades, all provinces and territories have been working towards fostering integration and improving services for children with exceptionalities (Dworet & Bennett, 2002; Lupart, 1998). Also, the majority of the provinces and territories place the regular classroom as a first option but allows for the possibility of special external programming as an alternative (Dworet & Bennett, 2002). Assessment and student program planning are also similar across Canada.

Assessment tends to involve multidisciplinary teams, often including non-education personnel (Dworet & Bennett, 2002). In most jurisdictions, a committee makes placement decisions and parents are involved in the decision-making process (Dworet & Bennett, 2002). The exact procedures for assessment and identification differ slightly across Canada, however, the process generally begins with teacher input, followed by a formal assessment and structured process (Dworet & Bennett, 2002). Subsequent program planning in Canada is based upon individual planning based on the child's strengths, needs, and resources (Dworet & Bennett, 2002). Finally, although the labels used to refer to individual program plans differ across the country (e.g., *Individualized Program Plan, Individual Education Plan*), the process to develop these plans and the overarching goals are consistent (Dworet & Bennett, 2002). Plans tend to be developed in collaboration with parents or caregivers, teachers, and other staff to identify and prioritize behavioral goals for the child in various academic, social, or other domains (Dworet & Bennett, 2002).

UN Convention on the Rights of the Child

In 1989, Canada ratified the *UN Convention on the Rights of the Child*, pledging to uphold the participatory rights of children and youth (Office of the United Nations High Commissioner for Human Rights, 2007). The Convention recognizes children as individual bearers of rights and advocates their participation in the decision-making process of matters affecting them, in accordance with their age and maturity (Office of the United Nations High Commissioner for Human Rights, 2007). Children have the right to have their opinions considered and to be heard in matters affecting them (Office of the

United Nations High Commissioner for Human Rights, 2007). To date, the convention has been ratified by all UN countries except the U.S.A. and Somalia (Johnny, 2005).

Courts are not bound by the Convention as Canada has not yet implemented it into domestic law, however, courts often consider it in order to inform decision-making (Johnny, 2005). Youth participation will likely lead to a more just and democratic society by cultivating civic virtues and encouraging democratic input in decision-making processes (Johnny, 2005). Youth participation is, however, largely dependent on adults who must provide them with opportunities to make decisions (Johnny, 2005).

It is difficult to realize participatory rights in the schools as the system is traditionally hierarchical and power-oriented (Johnny, 2005). Schools often exclude students from decision-making despite strong legal and political arguments for participation (Johnny, 2005).Traditional practices violate the rights to youth participation and decision-making, however, allowing children to play a more participatory role could benefit the system as children would be more likely to take responsibility and follow rules (Johnny, 2005). Schools have an obligation to uphold rights to age-appropriate participation in order to contribute to a democratic society (Johnny, 2005).

To date, children are rarely given decision-making power in the Canadian educational system. In Ontario, for example, student trustees are elected onto school boards, however, they are not given decision-making power (Johnny, 2005). Students participatory rights are inconsistent and haphazard across schools in Canada (Johnny, 2005). The Convention is a major step forward for Canada, however, the focus must now be on encouraging nation-wide implementation of the youth participatory rights.

Early Intervention Policy in Canada: A Province-By-Province Analysis

Although few journal publications exist regarding EI for children with delays in Canada, a great deal of information regarding relevant services and structures can be obtained by examining provincial and territorial ministries. Services and structures for children with developmental delays vary significantly across Canada. Although supports exist across the country, the quality and quantity of services is largely dependent on where one lives. It is important to determine what services are currently available across Canada and how services differ from province to province or territory to territory. From this information, it can be determined what provinces are providing optimal services and how the best components of different provinces could be combined to develop a national system of EI services for children with developmental delays in Canada. A thorough analysis of each pertinent ministry across Canada was conducted to convey what EI services are being offered. The following tables depict EI services across Canada.

Table 1

Ministries and Departments Providing Early Intervention Services

Province	Ministries or Departments
British Columbia	Ministry of Health Ministry of Children and Family Ministry of Education
Alberta	Alberta Children's Services Ministry of Education
Saskatchewan	Department of Community Resources Saskatchewan Learning
Manitoba	Department of Family Services and Housing Manitoba Education
Ontario	Ministry of Children and Youth Services Ministry of Community and Social Services Ministry of Education
Quebec	Ministère de la Santé et des Services Sociaux Ministère de l'Éducation, du Loisir et du Sport
Nova Scotia	Department of Community Services Department of Health Department of Education
New Brunswick	Department of Family and Community Services Department of Health
Newfoundland & Labrador	Department of Health and Community Services Department of Education
Prince Edward Island	Department of Health Department of Education Department of Social Services and Seniors
Yukon Territory	Department of Health and Social Services Department of Education
Northwest Territories	Department of Health and Social Services Department of Education, Culture and Employment
Nunavut	Department of Health and Social Services

Table 2

Early Intervention Service Coordination Across Canada

Province	Service Coordination
British Columbia	Community Living British Columbia (integrates community living services)
Alberta	Cross-ministry collaboration Collaboration with regional authorities
Saskatchewan	Provincial network of Early Childhood Intervention Programs (ECIPs)
Manitoba	*Information not available*
Ontario	Interministerial joint coordination and planning
Quebec	Ministère de la Santé et des Services Sociaux coordinates and integrates Quebec services
Nova Scotia	Interministerial collaboration Early Childhood Development Regional Collaboration (ECDRC) Teams
New Brunswick	Interministerial collaboration Early Childhood Initiative (Dept. of Family and Community Services and Dept. of Health)
Newfoundland & Labrador	*Information not available*
Prince Edward Island	*Information not available*
Yukon Territory	*Information not available*
Northwest Territories	*Information not available*
Nunavut	*Information not available*

Table 3

Key Early Intervention Initiatives and Acts in Canada

Province	Key Initiative or Act
British Columbia	Not Applicable
Alberta	Family Support for Children with Disabilities Act Alberta Children and Youth Initiative
Saskatchewan	Not Applicable
Manitoba	Healthy Child Manitoba Early Child Development Initiative
Ontario	Accessibility for Ontarians with Disabilities Act
Quebec	Not Applicable
Nova Scotia	Early Language and Learning Initiative
New Brunswick	Early Childhood Initiative
Newfoundland & Labrador	Not Applicable
Prince Edward Island	Not Applicable
Yukon Territory	Not Applicable
Northwest Territories	Healthy Children Initiative
Nunavut	Healthy Children Initiative

Table 4

Key Early Intervention Programs in Canada

Province	Key Early Intervention Programs
British Columbia	Infant Development Program EI Therapy Services Supported Child Development Outreach and Professional Supports Support Services for Children with Special Needs Early Intensive Behavioral Intervention (ABA) School Age Therapies Nursing Support Services
Alberta	Early Identification Services Preschool Services Health and Developmental Services Interdisciplinary Intervention Program Family and Community Support Services Supportive Education
Saskatchewan	Kids First Program Early Childhood Intervention Services Community School Pre-kindergarten Program ECE for Children with Disabilities Program
Manitoba	Children's Special Services -respite, child development, assistive technology
Ontario	Infant Development Program Best Start Program (Preschool Speech and Language) Ontario Early Years Program Behavior Management Program Respite Supports IBI Autism Program Child Care and Recreation Programs Residential Programs Children's Treatment Centres
Quebec	Centres de Sante et des Services Sociaux (CLSCs) Centres de Réadaptation en Déficience Intellectuelle
Nova Scotia	Early Intervention Program Family Supports Program Early Intensive Behavioral Intervention (EIBI) program

Table 4 Continued...

Province	Key Early Intervention Programs
New Brunswick	Home-based Early Intervention Early Childhood Social Work Services Health Clinics Services for Preschool Children with ASD Community-based Services for Children with Special Needs Support Services to Education
Newfoundland & Labrador	Specialized Services Intervention Services Social Work Services
Prince Edward Island	Best Start Program Respite Care Intensive Intervention Program Home-based Behavioral Supports Specialized Services
Yukon Territory	Child Development Centre Healthy Families Program Respite Programs Intensive Behavioral Therapy Supported Child Care Program
Northwest Territories	Community Action Program for Children
Nunavut	Special Residential Care

Table 5

Funding Options Across Canada

Province	Funding Options
British Columbia	Autism Funding (up to $20,000 for 0-6 yrs; up to $6,000 after) At-home Family Program (respite and medical benefits)
Alberta	Persons with Developmental Disabilities Boards (funding to choose own therapy and staff) Family Support for Children with Disabilities Program (reimbursement) Program Unit Funding (child care)
Saskatchewan	ECE for Children with Disabilities Program (funds service providers)
Manitoba	Children's Special Services (funds service providers)
Ontario	Special Services at Home (fund services and supports unavailable elsewhere) Assistance for Children with Severe Disabilities
Quebec	Allowance for Handicapped Children
Nova Scotia	Supported Child Care Program (funds service providers)
New Brunswick	*Information not available*
Newfoundland & Labrador	*Information not available*
Prince Edward Island	Child Disability Supports Program Special Needs Grant (funds service providers)
Yukon Territory	Community Action Program for Children (funds community coalitions)
Northwest Territories	Chronic Disease and Disability Program
Nunavut	Healthy Children Initiative

Present Study

In light of the fact that very few publications have addressed EI and even early childhood services in a broader sense, this study has been designed to investigate EI on a provincial and territorial basis. It is essential to determine what services and structures exist in order to identify the best practices in Canada as well as current limitations in service delivery frameworks. This study will allow for a comparison of models or approaches and may encourage provinces or territories that are further behind in terms of EI service delivery to adopt practices that are working in other parts of the country.

Although Ministries have provided information on EI programs in their respective province and territory, the information was not available, requiring much investigation and compilation. Also, the ministries only provide information on government funded EI programs and services. Information on private EI programs is not readily available.

This study has been designed to investigate EI services, models and centres across Canada, including public, private, government, and not-for-profit organizations. There are two overarching goals of this study. The first goal is to determine if and how provinces and territories differ across Canada in terms of EI services for children with developmental delays. Secondly, the study was designed to determine general trends in EI programming in Canada, collapsing across provinces to look specifically at the relationships between a variety of program and funding variables.

Goal one: Cross-province comparisons. The first overarching goal of this study is to determine if and how provinces and territories differ across Canada in terms of EI services for children with developmental delays. Therefore, provinces and territories will be compared with one another on a variety of variables (e.g., number of service providers, wait lists, ratings of success and satisfaction) from the questionnaire. To address the issue of limited sample sizes in several provinces and territories, groupings were constructed and comparisons were made between five regions determined by their respective time zones in Canada.

First, British Columbia and the Yukon Territory were grouped together to form the Pacific Time Zone sample. Secondly, Alberta and the Northwest Territories were grouped and will be referred to as the Mountain Time Zone. Saskatchewan and Manitoba make up the Central Time Zone and Ontario, Quebec, New Brunswick, and Nunavut comprise the Eastern Time Zone. Finally, Nova Scotia, Newfoundland and Labrador, and Prince Edward Island make up the Atlantic and Newfoundland Time Zone. This final group is actually a combination of two time zones, the Atlantic and Newfoundland Time Zone as such a combination was necessary due to limited sample sizes.

The five groups were compared to one another to determine whether or not significant differences exist across Canada in terms of the number of EI professionals, waitlists, and perceptions of satisfaction. These analyses were exploratory as this is the first investigation of its kind and research is not available to direct hypotheses. The following section illustrates the specific research questions that were posed to address this goal of the study.

1) Do significant differences exist across Canada in terms of the average number of EI professionals at the centre?

2) Do significant differences exist across Canada in terms of the average wait time to receive services?

3) Do significant differences exist across Canada in terms of personnel satisfaction with child outcomes?

4) Do significant differences exist across Canada in terms of service provider perceptions of parent satisfaction?

5) Do significant differences exist across Canada in terms of perceptions of the provincial and /territorial government's ability to meet the needs of children and families with developmental delays?

Goal two: Canadian findings. The second overarching goal of this study was to look at relationships between variables collapsing across provinces and territories to determine general trends in EI programming in Canada. The research questions are presented below with likely expected results:

1) Will a relationship exist between the wait time for service delivery and service provider perceptions of parent satisfaction?

As the first three years of life are critical for brain development and provide children with the foundation upon which future competencies and coping skills are formed, it is imperative that EI services begin as early as possible (Blackman, 2002; McCain & Mustard, 1999). In 2003, Woods and Wetherby found that children who began EI programs before three years of age made significantly greater gains than children who began after five years of age.

Long wait lists can prevent intervention from occurring early in the child's developmental trajectory, resulting in less significant improvements (Ramey & Ramey, 1998). Therefore, it is expected parents will become less satisfied with the services as the length of the wait list increases. As learning and development are most rapid in the preschool period (Baxter & Kahn, 1999), children whose intervention is delayed due to lengthy wait lists are expected to make less significant gains, resulting in lower levels of parental satisfaction.

2) Will there be a relationship between the number of services provided at the centre and service provider satisfaction with child outcomes as well as their perceptions of parental satisfaction

An essential component of effective EI is having a wide variety of programs designed to help the child in different ways (Bailey, 1998; Park & Turnball, 2003). Service providers should ideally offer supports in an integrated fashion under one roof to ensure the beneficial services are available to the families (Kyle, 2000). It is therefore expected that the greater the number of services provided at the centre, the greater the service provider and parent satisfaction with child outcomes as programs that offer multiple services and or therapies have more positive outcomes than single service centres (Blackman, 2002; Guralnick, 1998)

3) Will there be a difference between publicly and privately funded centres in terms of service provider satisfaction with child outcomes?

Canadian researchers have not found privately funded health centres to have significantly shorter wait lists and better child outcomes than publicly-funded centres (British Columbia Ministry of Health, 2005). A study of industrialized countries by the Organization for Economic Co-operation and Development revealed that creating a parallel private health care system would not improve the current public health system (Siciliani & Hurst, 2003). Therefore, significant differences in terms of satisfaction with child outcomes are not expected to be found between publicly and privately funded centres.

Chapter Three: Method

Participants

A survey was sent electronically or by mail to 932 EI centres from across Canada. The targeted centres included private, not for profit, public and government organizations that provide services for children with developmental delays and their families. Centres that were not multidisciplinary (i.e., did not provide at least two types of service for children with developmental delays) were excluded from our study. Whenever possible, the survey was directed to the executive director or program coordinator. If this contact information was not available the survey was sent to the general email account at the centre. Of the 932 targeted service providers, 184 participants took part in our study, a response rate of 20%. Table 1 provides a breakdown of the number of centres targeted in each province and territory and the number of respective respondents.

There was a great deal of variation in the number of and specific questions completed by each service provider. When surveys were incomplete, a subsequent email was sent to the participant to probe more information, however, service providers were sometimes unable to answer certain questions because they do not keep track of the requested information or the question is not applicable to the centre.

Table 6

Targeted and Actual Participants by Province or Territory

Province or Territory	Number of Centres Targeted	Number of Responses
British Columbia	142	37
Alberta	128	36
Saskatchewan	68	16
Manitoba	41	7
Ontario	220	40
Quebec	54	5
Nova Scotia	82	13
New Brunswick	54	17
Newfoundland & Labrador	56	3
Prince Edward Island	22	4
Yukon Territory	16	2
Northwest Territories	31	2
Nunavut	9	2

Instrumentation

A 29-item Early Intervention Questionnaire (see Appendix B) was designed to obtain information on EI centres across Canada in several domains. The survey questions can be divided into six areas of interest. Questions were designed to elicit information regarding demographics, service delivery and models, wait lists, funding and costs, challenges and concerns, and staff and parent satisfaction.

Demographic information. Demographic information (questions two through six) included contact information, number of children at the EI centre, number of children with developmental delays and age ranges of children serviced in the centre.

Service delivery and models. Information pertaining to service delivery and models of service delivery were the focus of questions seven through thirteen. Items pertained to types of services and service providers available at the centre, hours of service per week and by profession, service models, and the general approach to service delivery. Service models included home vs. centre-based programming, and parent-child groups. The general approach to service delivery reflected whether the program staff followed a multidisciplinary, interdisciplinary or transdisciplinary approach.

Average wait lists. The third part of the survey focused on wait lists for both assessment and intervention. Questions 14 through 17 pertained to information on whether wait lists existed for assessment and intervention and, if so, the average length that a child must wait for assessment and intervention services.

Funding and costs. Items 18 through 21 pertained to information on funding and cost for assessment and intervention. Information regarding sources of funding and average costs for assessment and direct service costs was sought through these questions.

Priorities, challenges and concerns. Information regarding priorities, challenges and concerns in the province and EI centre was obtained through both open and closed-ended questions. Questions 22 through 25 pertained to the top priorities of the centre, perceived concerns of parents, insufficient program resources and broad challenges for EI in the province or territory.

Staff and parent satisfaction. The final four items (questions 26 through 29) pertained to staff and parent satisfaction with the program, outcomes, and provincial and territorial data. Information was again obtained through both open and closed-ended questions. Questions pertained to perception of parent satisfaction, overall satisfaction with child outcomes, satisfaction with EI centre resources and ability of the government to meet the needs of children with developmental delays in the province or territory.

Procedure

The questionnaire was designed by the six principle members of the Canadian Early Intervention Research Team, Dr. Ingrid Sladeczek, Daniel Amar, Jennifer Saracino, Nancy Miodrag, Anastasia Karagiannakis, and Stephane Drai. After the questionnaire was refined, it was provided to the 144 attendees of the *National Conference on Early Intervention, Policy, Practice and Services for Children with Developmental Delays.* Feedback was provided by several conference participants and incorporated into the revised version of the survey. It was then emailed to members of the *Canadian Early Intervention Research Team* and colleagues in the field to ensure the questions were clear and that both the length and format of the survey were appropriate. It was also piloted to ensure there were no technical difficulties with the email and on-line format of the questionnaire. Based on the feedback, the survey was revised to its final version.

In order to target as many centres and programs as possible (and ensure consistency across Canada) the following procedures were undertaken for the recruitment of EI centre respondents for our study. First, EI centres were sought through national programs. Information was sought through each of the provincial and territorial Associations for Community Living. Early intervention contact information for centres across Canada was also sought through the Canadian Association of Family Resource Programs, Canadian Health Network, Canadian Association for Young Children, and Child and Family Canada. The Public Health Agency of Canada also provided contact information for the Centres of Excellence across Canada. Provincial and territorial EI centres were also targeted through Community Action Programs for Children and the Government of Canada website. The Research Alliance for Children with Special Needs also provided contact information for a variety of EI centres across Canada.

Subsequently, relevant provincial and territorial ministries were investigated to locate government-sponsored EI centres. Ministries of education, social service, family and children and health were targeted to locate EI centres in the respective province or territory. The specific ministry or ministries in charge of EI programming for children with developmental delays varied from province to province. Therefore, every ministry mandating service provision to children and individuals with special needs was investigated.

Disability organization websites were also searched to locate EI centres and programs across Canada. Provincial and territorial Autism and Down Syndrome societies were targeted across Canada. Enable Link, Charity Village and Autism Today also

provided a listing of various programs for children with developmental delays in each province and territory across Canada.

Key-word searches were also conducted to locate EI centres that may have been overlooked by the searches. Examples of keywords included in our search included early intervention, developmental delay, intellectual disabilities, special services, intervention services, infant development, and early childhood development. Canada 411 searches were also conducted for EI programs and child development centres. Finally, province or territory-specific websites provided information for additional EI centres to target for the study. Specific websites included Inform Alberta, Alberta Association of Services for Children and Families, Ontario Association for Infant Development, Manitoba Parent Child-Centered Coalition, and Saskatchewan Child Development Centres.

An email or letter explaining the purpose of the questionnaire and requesting participation was sent to each of the 932 potential respondents (see Appendix C). This letter of consent explained the purpose of the study, benefits to participating service providers and Canada as a whole. In addition to being included in the consent, a survey link was also posted on our website so that respondents from centres that may have been overlooked in the initial search for potential participants would have the opportunity to participate in the study. A reminder email was sent to potential respondents who had not yet completed their survey after approximately 10, 15, and 20 weeks. After completion of the study, a letter to debrief each of the participants and thank them for participation was sent out (see Appendix D).

Chapter Four: Results

Descriptive Statistics

Cross-province comparisons. Descriptive statistics were presented to compare the aforementioned Pacific, Mountain, Central, Eastern, and Atlantic and Newfoundland time zone samples. Table 7 provides information on the average number of children and breakdown by age in each geographical grouping. Table 8 provides information on the average number of services and service providers working at the center in each geographic sample. Table 9 was constructed to compare average wait times (in months) for assessment and service provision in each region in Canada and finally, Table 10 was constructed to provide information on regional differences in the average service provider success ratings (i.e., perceived parental satisfaction, satisfaction with child outcomes, program adequacy, and government adequacy). For each evaluation in Table 10, success was rated on a 10-point scale with a score of 1 indicating the lowest level of satisfaction and 10 representing the greatest level of satisfaction.

Table 7

Average Number of Children Receiving Services Across Canada

Time Zone	*Total Children*	*0 to 2 years*	*3 to 5 years*	*6 to 9 years*	*10 years+*
Pacific	560	244	172	71	18
Mountain	223	45	35	11	9
Central	218	20	39	3	2
Eastern	626	76	121	92	120
Atlantic	57	12	22	1	1
TOTAL	418	95	93	47	43

Table 8

Average Number of Services and Professionals Across Canada

Time Zone	*Services Provided*	*Professionals*
Pacific	10	5
Mountain	10	6
Central	10	5
Eastern	10	6
Atlantic	9	3
TOTAL	10	5

Table 9

Average Wait Times for Assessment and Commencement of Services

Time Zone	*Assessment Waitlist (mos)*	*Service Waitlist (mos)*
Pacific	2.65	4.67
Mountain	2.03	4.86
Central	2.53	3.38
Eastern	3.16	4.97
Atlantic	1.94	6.18
TOTAL	2.59	4.85

Table 10

Average Ratings of Program Success

Time Zone	*Perceived Parental Satisfaction*	*Satisfaction with Child Outcomes*	*Program Adequacy*	*Government Support*
Pacific	8.40	7.90	7.54	4.77
Mountain	8.57	8.17	7.76	5.36
Central	7.94	7.25	7.13	5.00
Eastern	8.39	7.85	7.60	4.98
Atlantic	8.43	7.79	7.29	5.86
TOTAL	8.38	7.85	7.53	5.10

Canadian findings. Descriptive statistics were also computed, collapsing across provinces and territories, to provide a general overview of EI service provision in Canada. On average, EI centres offered 10 different services and employed 5 different types of professionals. Canadian children attended programs for an average of 25.90 months, after waiting an average of 2.59 months for an assessment and 4.85 additional months to begin services. Many centres received financial contributions from several sources. The most common source of funding was the provincial or territorial government, which funded 84.55% of EI centres. In addition, 10.92% of centres received funding from private sources, and 3.92% received support from non-profit sources.

Service providers were asked to rate their success, on a scale of one to ten, one being least and ten being most satisfied, in four areas. Service providers rated their perception of parental satisfaction as 8.38 and their satisfaction with child outcomes as 7.85. Service providers across Canada rated the ability of their program to meet the needs of children and families with developmental delays as 7.53, on average. Finally, they gave the lowest ratings regarding their perception of the government's ability to meet the needs of children and families with developmental delays, with an average of 5.10.

Analysis of Cross-Province Comparisons.

The Pacific, Mountain, Central, Eastern and Atlantic and Newfoundland samples were compared with one another on five dependent variables: (a) number of services at the centre, (b) wait time for services, (c) service provider satisfaction with child outcomes, (d) rating of the government's ability to meet the needs of children with families with developmental delays, and (e) service provider rating of perceived parental satisfaction.

For each of the five variables, an Analysis of Variance (ANOVA) was conducted to analyze the effect of geographical location (time zone) on the respective dependent variable. When there are several dependent variables, a Multivariate Analysis of Variance (MANOVA) can be conducted, however, only if the dependent variables are not highly correlated (Glass & Hopkins, 1996). A Pearson Product Moment correlation procedure was conducted to determine if the five dependent variables were correlated. As two of the variables were highly correlated, five ANOVAs were conducted to analyze the data. The results of each of the five research questions are presented sequentially below:

Number of EI professionals. The five geographic samples were compared to determine if significant differences existed across Canada in terms of the average number of different EI service professionals working at the centre. Using an ANOVA, significant differences were found between the time zone samples $F(4, 119) = 2.89, p < .05$. A Games-Howell post hoc test was run to determine where the differences existed. It was found that the Mountain time zone sample had significantly more EI professionals than the Atlantic and Newfoundland sample $F(4, 172) = 2.77, p < .05$. Another significant difference was found between the Eastern and Atlantic and Newfoundland samples $F(4, 172) = 2.72, p < .05$, with the Eastern sample having significantly more EI professionals.

Wait list for services. The regions were also compared to one another using an ANOVA to determine if significant differences existed in terms of the average length of time a child waits before receiving service. Significant differences were not found between the five time zone samples $F(4, 133) = .28, p = .89$.

Child outcomes. Thirdly, the five regions were compared using an ANOVA to determine if significant differences existed regarding service provider satisfaction with child outcomes. Differences were not statistically significant $F(4, 134) = 1.40, p = 0.24$.

Government success. An ANOVA was also used to compare the five time zone samples in terms of service provider perceptions of the provincial or territorial government's ability to meet the needs of children and families with developmental delays. Significant differences were not found across Canada $F(4, 133) = 1.30, p = 0.27$.

Perceived parental satisfaction. Finally, the five time zones were compared with an ANOVA to determine if significant differences existed in terms of service provider perceptions of parental satisfaction. Significant differences were not found across Canada $F(4, 133) = 1.08, p = 0.37$.

Analysis of Canadian Findings

The data was analyzed to determine whether or not a relationship existed between wait time and service provider's perception of parent satisfaction. A negative relationship was found between wait time and service provider perception of parent satisfaction ($r = -.16$, n.s.). A tendency in which, as average wait time increases, parental satisfaction decreases.

An analysis was also conducted to determine if a relationship existed between number of services and perceived parent and service provider satisfaction with child outcomes. Two separate analyses were conducted to examine this research question. First, a Pearson Product Moment Correlation was computed to examine the relationship between number of services and service provider satisfaction with child outcomes ($r =$

.11, n.s.). There is a tendency that, as number of services increase, service provider satisfaction with child outcomes also increases

A subsequent Pearson Product Moment Correlation was computed to examine the relationship between number of services provided at the centre and perceived parental satisfaction (r = -.05, n.s.). Although the tendency is that as number of services increases, perceived parental satisfaction decreases, the low correlation would suggest that the relationship is not linear.

A subsequent analysis was conducted to determine if a relationship existed between public or private funding and service provider satisfaction with child outcomes. The percentage of private funding was positively and significantly correlated with service provider satisfaction with child outcomes (r = -.18, $p<.05$) and percentage of government funding was negatively and significantly correlated with service provider with child outcomes (r = -.20, $p<.05$.). As private funding increased and government funding decreased, service provider satisfaction with child outcomes improved.

Chapter Five: Discussion and Conclusion

This study was undertaken to examine the critical success factors, best practices, and current gaps in EI service delivery across Canada. Provinces and territories were divided into five groups and compared with one another. Comparisons were made to determine if significant differences exist between the groups in five areas: average number of EI service providers at the centre, average wait time, personnel satisfaction with child outcomes, perceived parent satisfaction, and perception of the government's ability to meet the needs of children and families with developmental delays.

In addition to making cross-province comparisons, the aggregate data was also used, pooling across provinces and territories, to explore additional research questions regarding Canada as a whole. Based on the literature, it was expected that a negative relationship would exist between wait time and perceived parent satisfaction. Second, it was expected that a positive relationship would exist between the number of services provided at the center and personnel and perceived parent satisfaction with child outcomes. Finally, significant differences were not expected between privately and publicly funded centres in terms of satisfaction with child outcomes.

Cross-Province Comparisons.

Based on the literature review of Canadian Early Intervention policy and practice, it was expected that there would be significant variation across the country in terms of the five dependent variables that were tested. As EI programs in Canada are left to provincial or territorial jurisdiction, a large degree of variation exists in terms of service delivery (den Heyer & Kienapple, 2005). As there is not a coherent set of guidelines or national

policy to assist families and professionals with a vested interest in EI, it was expected that substantial differences would be apparent in the analyses, however, this was not the case.

The only analysis that revealed significant differences across time zones was the average number of different service professionals working at an EI centre $F(4, 119) = 2.89, p<.05$. Early intervention centres in the Mountain and Eastern time zones employed significantly more EI professionals than those in the Atlantic and Newfoundland time zone. This finding could be, at least in part, explained by the government-mandated service coordination initiatives in several Mountain and Eastern time zone samples. For example, in Alberta, cross-ministry collaboration is facilitated through regional health authorities (Alberta Children's Services, 2006). Ontario has inter-ministerial joint coordination and planning, as does New Brunswick through the Early Childhood Initiative (New Brunswick Department of Health, 2006). Although service coordination is mandated in Nova Scotia, information regarding service coordination initiatives in Newfoundland and Labrador and Prince Edward Island was not found through key word searches or on the provincial ministerial websites. Although this cannot be known definitively, if there is indeed less emphasis put on service coordination in this time zone, it could likely follow that there are fewer EI professionals working at the centres, contributing to the significant differences found in this analysis. A provincial emphasis on service coordination facilitates the existence of multidisciplinary centres, where more service providers work together at one facility.

According to research by McWilliam and Scott (2001) and Ramey and Ramey (1998), programs that offer a breadth of different services are more effective than single service centres (McWilliam & Scott, 2001; Ramey & Ramey, 1998). If there are fewer EI

professionals at the centres in the Atlantic and Newfoundland sample, it could follow that there are less services available as well, resulting in less significant gains for children with developmental delays. However, it is important to keep in mind that the specific types of professionals working at the centre could be more important than the number of different professionals. Unfortunately, due to limited sample size and missing data, this could not be analyzed in this study. In any case, centres in the Atlantic and Newfoundland sample should keep in mind the research linking breadth of services and child outcomes. They could benefit from extending the number of services and service providers working at EI centres in the region.

The average number of service providers was the only significant difference found between time zone samples in Canada. There were no significant differences in average wait times, satisfaction with child outcomes, perceived program adequacy, or perceived parental satisfaction. This lack of significance was not expected as a lack of consensus in EI service provision seems to be the consensus as programming is left to provincial or territorial jurisdiction (den Heyer & Kienapple, 2005).

There are several possible explanations for the lack of difference found across provinces and territories in Canada. First, there was only a 20% response rate for this initial analysis, or 184 respondents from across Canada. This limited sample size could likely have masked true differences that do exist between provinces and territories across Canada. If the analysis was conducted with a larger sample, the findings could have been very different.

Related to the first point, it is possible that groupings obscured potential differences. Due to limited sample size, provinces and territories were grouped together

according to geographical location or time zone. Grouping provinces and territories by geographical location could have resulted in a moderating effect, whereby differences were minimized as information was collapsed across different provinces or territories. For example, the no waitlist policy in Newfoundland and Labrador could quite plausibly lead to significantly shorter wait times in that province when compared to others. However, when data from Newfoundland and Labrador were combined with other provinces in the time zone sample, this advantage could have been lost by longer waitlists in other provinces in the grouping.

Finally, it is possible that there really are no true differences across provinces and territories on the variables investigated for this study. However, this conclusion is premature and the limited variability is most likely due to the low response rate.

Canadian Findings

The Canadian data was analyzed aggregately to determine if a relationship existed between wait time and perceived parental satisfaction. A tendency was found whereby parental satisfaction decreased as wait times increased. As wait times increase, children are forced to start programs later in their developmental trajectory, resulting in less significant gains and most likely, a decrease in parental satisfaction.

Although the relationship was negative, as expected based on the literature, the correlation was low (r = -.16, n.s.). This implies that wait times alone cannot predict much variation in perceived parental satisfaction. There are many other variables that likely influence parental satisfaction, having a cumulative effect on satisfaction levels. For example, as multidisciplinary programs are related to better EI outcomes (Ramey & Ramey, 1998), the number of services available at the centre likely also has an impact on

the ratings of perceived parental satisfaction. In addition to variables that are widely researched in the literature and that were investigated in this study, there are other factors that can influence parental satisfaction with EI programs. For example, having parent support networks, living close to the centre, and having positive relationships with centre staff could also play a role in how satisfied parents are with their child's success. To conclude, although there is a tendency for parental satisfaction to decrease as wait times increases, this relationship is small and there are many factors that are unaccounted for.

The data was then explored to determine if a relationship existed between number of services service provider and perceived parental satisfaction with child outcomes. First, there was a tendency for service provider satisfaction to increase as number of services increased (r = .11, n.s.). Many researchers have shown that centres offering multiple services are more successful than single service centres in terms of child outcomes, possibly explaining the increased service provider satisfaction (McWilliam & Scott, 2001; Ramey & Ramey, 1998). However, the low association between number of services and service provider satisfaction would suggest that much of the variance in satisfaction cannot be accounted for by changes in the number of services and the linear relationship between the two variables. Variables, such as waitlists, child temperament, and how the child is faring in comparison to other children at the centre could also influence the service provider's level of satisfaction and number of services alone cannot explain how service providers will rate child outcomes.

The relationship between number of services and perceived parental satisfaction was also explored. The correlation between these two variables was so low that it is unlikely that the relationship is linear. In other words, the relationship between number of

services and parental satisfaction was virtually non-existent in this analysis. Parental satisfaction would be better explained by variables other than number of services. For example, perhaps parental explanation is more strongly related to social and practical support from staff, shorter wait times and funding. Further analyses are necessary to further explore such hypotheses

The third research question was whether there were differences between public and private service provision and service provider satisfaction with child outcomes. Significant differences were not expected between public and private centres, however, a significant effect was found in that percentage of private funding was positively correlated with service provider satisfaction with child outcomes and percentage of government funding was negatively correlated with satisfaction. There are several possible explanations for this finding. First, the available research on the relationship between public and private funding and program success was not conducted on EI centres specifically, but on hospital and clinic-based health programs. Therefore, although in general privately funded health organizations in Canada do not fare better than publicly funded centres, this may not necessarily be the case for EI centres specifically.

A second explanation for the greater levels of service provider satisfaction when percentage of private funding increased deals with the fact that private funding at the sampled centres was rarely mutually exclusive to public funding. In other words, most centres that received private funding received it *in addition* to public funding. Therefore, it is not a direct comparison of private versus public centres but of centres that are funded publicly and privately versus government funded centres. If centres are receiving funds from multiple sources, it could likely follow that they have more funds for services

overall. It could logically follow that greater funding is associated with greater child outcomes as the money and resources are available to provide great support to the child and family.

Limitations and Future Directions

Sample size and under-representation. Although there were sufficient survey respondents from British Columbia, Alberta, Saskatchewan, Ontario, Nova Scotia and New Brunswick, the response rate from the other provinces and territories was too low to make any generalizable assumptions on a provincial basis (See Table 6). This was especially problematic with the three territories in Canada. Only two service providers from each territory responded to the survey. This is not surprising considering the limited number of service providers working in each of the territories, however, it did limit our ability to make comparisons on a provincial and territorial basis. This problem also existed with two provinces from our eastern sample, Prince Edward Island and Newfoundland & Labrador. Only three EI service providers from each of the aforementioned provinces participated in the study. Response rates were also low in Quebec ($n = 5$) and Manitoba ($n = 5$) despite larger populations and more targeted centres.

In response to this study limitation, data collection is ongoing and provinces and territories with low response rates or fewer centers will be targeted more intensely. Due to time restraints, this analysis took place with a limited number of respondents, however, more data will be collected from the targeted centers. It would also be useful to conduct a subsequent search of EI centres to determine if any were overlooked in the first study or have recently opened.

Response rate. Only twenty percent of targeted EI centres in Canada participated in the first wave of this national survey. Although differences exist regarding the definition of a low response rate, many researchers deem a response rate of less than forty percent as being "low" (Baruch, 1999; Cull, O'Connor, Sharp, & Tang, 2005; Newell, Rosenfeld, Harris, & Hindeland, 2004). Therefore, the response rate to date is low and strategies must be implemented to increase future response rates. This is important as greater response rates are associated with perceived validity, representativeness, and statistical power (Andersen & Blackburn, 2004). Low response rates have been associated with response bias, limited generalizability, and less survey credibility (Baruch, 1999).

A great deal of research has been conducted on strategies for increasing survey response rates in academic, organizational, educational, and consumer research fields (Baruch, 1999; Cook, Heath, & Thompson, 2000; Jobber, Saunders, & Mitchell, 2004; Newell et al., 2004; Price, Yingling, Walsh, Murnan, & Dake, 2004; Tuten, Galesic, & Bosjnak, 2004). Price and colleagues (2004) found that using more insistent wording in place of amiable text resulted in greater response rates from a sample of 680 nurses in a mail out survey. Similarly, Andersen and Blackburn (2004) found a positive relationship between language intensity and response rate. Therefore, the survey text could be analyzed and modified before the survey is sent out to the target population again, ensuring that a stronger emphasis is placed on the importance of participation and that the language in the consent form is less neutral.

Personalized letters have also been associated with significantly greater response rates (Andersen & Blackburn, 2004). Large scale, generic emails were sent out to

potential respondents and the lack of personal address may have had a negative impact on response rate. In the next round of survey recruitment, although time consuming, it would be beneficial to personally address each director with an individual request for participation, especially those in provinces or territories with low response rates.

Another suggestion for increasing participation in survey research is to shorten the length of the survey as lengthy surveys are less likely to be completed (Newell et al., 2004). Although there are only 29 items, some items require a great deal of thought and are complicated to answer. There are certain items that few participants responded to. These could potentially be taken out of the survey prior to the second round of participation recruitment. An item-response analysis should be conducted to determine which items could be most logically removed from the existing survey. An item response analysis allows the researcher to see which variables are highly correlated with one another, suggesting a common underlying variable (Ryan, 1983). If several variables are extremely correlated, this could suggest that they are measuring the same construct and this could justify the elimination of one of the variables. Reducing the length of the survey while maintaining vital information could result in a larger response rate as participants can be deterred by lengthy questionnaires (Newell et al., 2004).

A great deal of research has been conducted regarding the value of incentives in survey research (Jobber et al., 2004; Newell et al., 2004; Tuten et al., 2004). Monetary incentives have been shown to have a significant impact on survey response rates for both consumer and organizational populations (Jobber et al., 2004). Alternatively, prize incentives have been found to have a significant impact on survey participation as well (Tuten et al., 2004). In relation to this last strategy, the team is continuing to put in

applications for corporate sponsorship in order to have incentives for survey participants. For example, requests have been made to Air Transat for a trip that can be raffled off and to toy companies such as Leap Frog, Mega Blocks, and Lego for toys that can be given for to those who take part in the survey.

Provincial groupings. Although the provinces and territories were logically grouped together based on geographical location using time zone sampling, a more accurate depiction of the provincial and territorial differences would have been made by analyzing each province and territory separately. Unfortunately, due to the aforementioned limitations with sample size and under-representation of certain provinces and territories, it was not possible for this study. Other means of grouping provinces and territories were examined, however, most studies excluded the territories due to remoteness and sample size restrictions (for example, the Statistics Canada PALS 2001 Survey). In order to make a true comparison across Canada, we wanted to include all provinces and territories and consequently decided to include the territories despite limited sample size. In order to be able to make province-by-province comparisons, the aforementioned strategies to increase participation rates will be implemented and hopefully, future analyses can be made on an individual basis, as opposed to comparing groupings of provinces and territories.

Language. At first, one can see a general trend where less surveys were returned by provinces and territories that with small populations, including Nunavut, Northwest Territories, Yukon Territory, and Prince Edward Island. Provinces with large populations, including British Columbia, Alberta, and Ontario, had significantly more responses than small or sparsely populated provinces and territories. A notable exception, however, was

recognized in Quebec. It is possible that the low response rate in Quebec (n = 5) can be explained, at least in part, by the fact that the questionnaire was only available in English. This could have deterred francophone (or even those more comfortable reading and writing in French) from taking part. Several directors in Quebec and New Brunswick specifically asked if the questionnaire was available in French. A translation of the survey instrument into French could encourage greater participation from EI centre directors in Quebec in cases when French is their first language. Therefore, a French version of the questionnaire will be made available when participant recruitment continues.

Examination of other variables. The survey instrument consisted of 29 items, of which only a fraction were analyzed. Subsequent researchers could examine other variables that have not yet been analyzed due to time restraints. All questions included in the survey instrument were included in the instrument due to their perceived importance, therefore, a wide variety of additional research questions could be examined with this data. For example, the present study did not examine any of the qualitative responses, differences in service delivery models, or service hour allocation by profession.

Conclusion

This research study is of great importance to the field as it is the first of its kind to compare EI centres across all provinces and territories in Canada. It has allowed for cross-province comparisons of a wide variety of variables, including wait lists, number of services and service providers, funding, and several ratings of perceived success. Provinces and territories were more similar than expected in a variety of ways, including average wait times for service delivery and various ratings of program success. It is possible that provinces and territories are more heterogeneous than identified through this

study but that the specific variables did not tap into such differences and the artificial grouping minimized the perceived differences.

The researchers also examined a variety of research hypotheses which, for the most part, supported previous research in the field. Multidisciplinary service provision and shorter wait times were associated with more favorable ratings of child outcomes. It was also found that having private funding, at least in part, improved ratings of child success as well.

The major contributions of this study include improving knowledge of EI service provision across Canada. More specifically, information on average wait times, sources of funding, average number of professionals, and ratings of perceived parental satisfaction and satisfaction with services and child outcomes was obtained from each province and territory in Canada. The study was also developed to identify gaps in current service delivery systems. Service providers rated the government's ability to meet the needs of children and families with developmental delays more poorly than all other ratings of satisfaction, an indication that government support is a gap in the current system on a national level. The results of the study could facilitate service providers in examining alternative models and could motivate them to re-examine current policies and practices and encourage the addition of new elements into their existing service delivery framework.

References

Alberta Children's Services. (2006). *Children and Youth with Special and Complex Needs* . Retrieved August 10, 2006, from Alberta Children's Services Web site: www.child.gov.ab.ca/acyi/page.cfm?pg=Children%20and%20Youth%20with 20Special%20Complex%20

Alberta Children's Services. (2005). *Family support for children with disabilities act.* Retrieved April 2, 2006, from Alberta Children's Services Web site: http://www.child.gov.ab.ca/whatwedo/fscd/page.cfm?pg=index

Autism Society of British Columbia. (2006). *Services and funding.* Retrieved August 13, 2006, from the Autism Society of British Columbia Web site: http://www.autismbc.ca/services_funding.php

Autism Society of Canada. (2005). *The right to treatment.* Retrieved November 13, 2006 from the Autism Society of Canada Web site: http://www.autismsocietycanada.ca/approaches_to_treatment/right_to_treatment/index_e.html

Autism Treatment Services of Canada. (2006). *Early intervention.* Retrieved January 15, 2007 from the Autism Treatment Services of Canada Web site: http://www.autism.ca/interv.htm

Bagdi, A., & Vacca, J. (2005). Supporting early childhood social emotional well-being: The building blocks for early learning and school success. *Early Childhood Education Journal*, 33, 145-150.

Bailey, D., Aytch, L., Odom, S., Symons, F., & Wolery, M. (1999). Early intervention as we know it. *Mental Retardation and Developmental Disabilities Research Reviews*, 5, 11-20.

Baxter, A., & Kahn, J. (1999). Social support, needs and stress in urban families with children enrolled in an early intervention program. *Infant-Toddler Intervention,* 9, 239-257.

BC Children's Hospital Foundation. (2003). *Can lightening strike twice?* Retrieved November 1, 2006, from the BC Children's Hospital Foundation Web site: http://www.bcchf.ca/newscentre/magazine/spring_2003/lightning

British Columbia School Trustees Association. (2004). It's all about student achievement. *Education leader*, 17, 1-12.

Belanger, N. (2001). Solicitude and special education policies. *Cambridge Journal of Education*, 31, 337-348.

Bernhardt, B., & Major, E. (2005). Speech, language and literacy skills three years later: A follow-up study of early phonological and metaphonological intervention. *International Journal of Language and Communication Disorders*, 40, 1-27.

Blackman, J. (2002). Early intervention: A global perspective. *Infants and Young Children*, 15, 11-19.

Borman, G., & Hewes, G. (2003). Long-term effects and cost effectiveness of Success for All. *Educational Evaluation and Policy Analysis, 24*, 243-266.

Brink, M. (2002) Involving parents in early childhood assessment: Perspectives from an early intervention instructor. *Early Childhood Education Journal*, 29, 251-257

British Columbia Association of Child Development and Intervention. (2005). *Submission to the select standing committee on finance and government service: October 2005*. Retrieved November, 16, 2006, from the Fraser Valley Child Development Centre Web site: bcacdr/downloads/BCACDI%20Submission%20to%20Standing%20Committe%20on%20Finance%20-%20October.pdf

British Columbia Ministry of Children and Family Development. (2006). *Children and Youth with Special Needs*. Retrieved August 13, 2006, from the British Columbia Ministry of Children and Family Development Web site: http://www.mcf.gov.bc.ca/spec_needs/

British Columbia Ministry of Children and Family Development. (2005). *Annual service plan reports 2004/05: Ministry of Children and Family Development*. Retrieved March 25, 2006, from the Government of British Columbia Web site: www.bcbudget.gov.bc.ca/Annual_Reports/2004_2005/cfd/Ministry_Role_and_Services.html

British Columbia Ministry of Children and Family Development. (2005B). *Services and programs: Age 6 up to 19.* Retrieved April 2, 2006, from the Government of British Columbia Web site: www.bcbudget.gov.bc.ca/Annual_Reports/2004_2005/cfd/Ministry_Role_and_Services.htm

British Columbia Ministry of Children and Family Development. (2005C). *British Columbia's annual report 2004/05: Activities and expenditures on early childhood development and early learning and child care*. Retrieved November 1, 2006, from the British Columbia Ministry of Children and Family Development Web site: http://www.mcf.gov.bc.ca/early_childhood/pdf/ecd_annual_2005.pdf

British Columbia Ministry of Health. (2005). *Frequently asked questions*. Retrieved November 19, 2006, from the British Columbia Ministry of Health Web site: http://www.healthservices.gov.bc.ca/waitlist/faq.html#4

Bruder, M. (2000). Family-centered early intervention: Clarifying our values for the new millennium. *Topics in Early Childhood Special Education*, 20, 105-115.

Brynelsen, D. (2006). *DDA gets major funding. The Star, Summer 2006*. Retrieved November 1, 2006, from the Developmental Disabilities Association Web site: http://www.develop.bc.ca/documents/Star_news_summer2006.pdf

Campbell, P., & Halbert, J. (2002). Between research and practice: Provider perspectives on early intervention. *Topics in Early Childhood Special Education*, 22, 213-226.

Carpenter, B. (2005). Early childhood intervention: Possibilities and prospects for professionals, families and children. *British Journal of Special Education*, 32, 176-183.

Center of Excellence for Child Welfare. (2005). *Alberta Child Welfare Reform: Reform initiatives*. Retrieved April 6, 2006, from the Center of Excellence for Child Welfare Web site: http://www.cecw-cepb.ca/Policy/ReformAlberta.shtml

Chambers, B., Abrami, P., Massue, F., & Morrison, S. (1998). Success for all: Evaluating an early-intervention program for children at risk of school failure. *Canadian Journal of Education*, 23, 357-372.

Childress, D. (2004). Special instruction and natural environments: Best practices in early intervention. *Infants and Young Children*, 17, 162-170.

Community Living British Columbia. (2006). *Glossary*. Retrieved October 31, 2006, from the Community Living British Columbia Web site: http://www.communitylivingbc.ca/glossary.htm

Community Living British Columbia. (2005). *MCFD-CLBC Children's Agreement*. Retrieved March 31, 2005 from the Community Living British Columbia Web site: http://www.communitylivingbc.ca/pdfs/childrens_agreement_jul05.pdf

Currie, J. (2000). *Early intervention programs: What do we know?* Retrieved October 8, 2006, from the Joint Center for Poverty Research Web site: http://www.jcpr.org/wpfiles/currie_early_childhood.pdf#search=%22Economics%20of%20early%20childhood%20intervention.%22

Dunst, C., & Bruder, M. (2002). Valued outcomes of service coordination, early intervention and natural environments. *Exceptional Children*, 68, 361-375.

Dworet, D., & Bennett, S. (2002). A view from the north: Special education in Canada. Teaching *Exceptional Children*, 34, 22-28.

Early Intervention Nova Scotia. (2006). *Early Intervention Association of Nova Scotia (EINS)*. Retrieved April 12, 2006, from the Early Intervention Nova Scotia Web site: http://www.earlyintervention.net/association.cfm

Eaves, L., & Ho, H. (2004). The very early identification of autism: Outcome to age 4 ½ to 5. *Behavioral Science*, 34, 367-378.

Frankel, E. (2004). Supporting inclusive care and education for young children with special needs and their families: An international perspective. *Childhood Education*, 80, 310-316.

Friendly, M., Beach, J., & Turiano, M. (2002). *Early child care and education in Canada: Provinces and territories, 2001*. Toronto: Childcare Resource and Research Unit, Centre for Urban and Community Studies, University of Toronto.

Gallagher, P., Rhodes, C., & Darling, S. (2004). Parents as professionals in early intervention: A parent educator model. *Topics in Early Childhood Special Education*, 24, 5-13.

Glass, G. & Hopkins, K. (1996). Statistical methods in education and psychology: Third edition. Allyn & Bacon: United States of America.

Government of Alberta. (2006). *Key health initiatives*. Retrieved November 1, 2006, from the Government of Alberta Website: http://www.health.gov.ab.ca/key/reform_getting.html#children

Government of Alberta. (2006B). *Improving access to health services*. Retrieved November 1, 2006, from the Government of Alberta Website: http://www.health.gov.ab.ca/public/in_access.html

Government of Newfoundland and Labrador. (2001). *Health and community service planning for the future*. Retrieved November 1, 2006, from the Government of Newfoundland and Labrador Web site: http://www.releases.gov.nl.ca/releases/2001/health/0322n33.htm

Government of Nova Scotia. (2006). *Nova Scotia's early childhood initiative and multilateral framework on early learning and child care*. Retrieved April 12, 2006, from the Government of Nova Scotia Web site: http://www.gov.ns.ca/coms/families/pdf/ECD%20Annual%20Report.pdf

Government of Prince Edward Island. (2006). *Building on success: Best start program.* Retrieved April 13, 2006, from the Government of Prince Edward Island Web site: http://www.gov.pe.ca/infopei/index.php3?number=67430

Government of Prince Edward Island. (2006B). *A strategy for healthy child development: Summary report*. Retrieved April 13, 2006, from the Government of Prince Edward Island Web site: http://www.gov.pe.ca/photos/original/healthy_child.pdf

Government of Prince Edward Island. (2000). *A strategy for healthy child development: Summary report*. Retrieved April 13, 2006, from the Government of Prince Edward Island Web site: http://www.gov.pe.ca/photos/original/healthy_child.pdf

Grant, R. (2005). State strategies to contain costs in the early intervention program: Policy and evidence. *Topics in Early Childhood Special Education, 25, 243-250.*

Gray, S. (1971). Home visiting programs for parents of young children. *Peabody Journal of Education*, 48, 106-111.

Greenwald, L., Siegel, M. & Greenwald, R. (2006). Kindering Center: A comprehensive early intervention community-based program model. *Infants and Young Children*, 19, 190-202.

Guralnick, M. (2002). Model service systems as research priorities in early intervention. *Journal of Early Intervention*, 25, 100-101.

Guralnick, M. (2000). Early childhood intervention: Evolution of a system. *Focus on Autism and Other Developmental Disabilities*, 15, 68-79.

Guralnick, M. (1998). Effectiveness of early intervention for vulnerable children: A developmental perspective. *American Journal of Mental Retardation*. 102, 319-345.

Hanson, M. (2003). Twenty-five years after early intervention: A follow-up of children with Downs Syndrome and their families. *Infants and Young Children*, 16, 354-365.

Hays, P. (2001). *Addressing cultural complexities in practice: A framework for clinicians and counselors*. Washington, D.C.: American Psychological Association.

Howlin, P., Goode, S., Hutton, J., & Rutter, M. (2004). Adult outcomce for children with autism. *Journal of Child Psychology and Psychiatry*, 45, 212-229.

Hunsley, J., & Crabb, R. (2004). Shaping the future of psychological services in the Canadian health care system: A response to Romanow and Marchildon (2003). *Canadian Psychology*, 45, 3-5.

Individuals with Disabilities Education Act. (2004). *Section 303: Early intervention program for infants and toddlers with disabilities*. U.S. Department of Education.

Inform Alberta. (2006). *Service listing*. Retrieved April 1, 2006, from the Inform Alberta Web site:
http://www.informalberta.ca/public/subject/sbjProfileService_Initialize.do

Jacobson, J. W., Mulick, J. A., & Green, G. (1998). Cost-benefit estimates for early intensive behavioral intervention for young children with autism: General model and single state case. *Behavioral Interventions,* 13, 201-226.

Johnny, L. (2005). UN Convention on the Rights of the Child: A rationale for implementing participatory rights in school. *Canadian Journal of Educational Administration and Policy,* 40, 1-20.

Johnson, L., and Mathien, J. (1998). *Early Childhood Education services for Kindergarten-age children in four Canadian provinces: Scope, nature and future models*. Ottawa: Caledon Institute of Social Policy.

Kyle, I. (2000). Towards a framework for integrating early childhood development and family support programs, part II: Exemplary models of child care and family support in other jurisdictions. *The Canadian Journal of Research in Early Childhood Education*, 8, 37-65.

La Paro, K., Olsen, K., & Pianta, R. (2002). Special education eligibility: Developmental precursors over the first three years of life. *Exceptional Children*, 69, 55-66.

Lewis, S., Donaldson, C., Mitton, C., & Currie, G. (2001). The future of health care in Canada. *British Medical Journal*, 323, 926-929.

Lupart, J. (1998). Setting right the delusion of inclusion: Implications for Canadian schools. *Canadian Journal of Education*, 23, 251-264.

Lyon, M. (2002). *Present policy and practice and future directions in early intervention in Canada*. Retrieved November 19, 2006, from the Health Canada Web site: http://www.hc-sc.gc.ca/sr-sr/finance/hprp-prpms/final/2002-intervention_e.html

Madden, N., Slavin, R., Karweit, N., Dolan, L., & Wasik, B. (1993). Success for All: Longitudinal effects of a restructuring program for inner-city elementary schools. *American Educational Research Journal, 30,*123-148.

Malone, M., & Straka, E. (2005). Interdisciplinary preservice specialization project: A model for early intervention personnel preparation. *Infants and Young Children*, 18, 245-260.

Majnemer, A. (1998). Benefits of early intervention for children with developmental disabilities. *Seminars in Pediatric Neurology*, 5, 62-69.

Majnemer, A., Shevell, M., Rosenbaum, P., & Abrahamowicz, M. (2001). Early rehabilitation service utilization in young children with developmental delays. *Child Care Health and Development*, 28, 29-37.

Manitoba Family Services and Housing. (2006). *Children's Special Services.* Retrieved September 1, 2006, from the Government of Manitoba Web site: www.gov.mb.ca/fs/pwd/css.html

Manitoba Family Services and Housing. (2006B). *Child day care children with disabilities program.* Retrieved September 1, 2006, from the Government of Manitoba Web site: www.gov.mb.ca/fs/pwd/cwcl.html

McCain, M., Mustard, F., & Shanker, S. (2007). Early Years Study 2: Putting science into action. Council for Early Childhood Development: Toronto, Ontario.

McCollum, J. (2002). Influencing the development of young children with disabilities: Current themes in early intervention. *Child and Adolescent Mental Health*, 7, 4-9.

McCollum, J., Gooler, F., Appl, D., & Yates, T. (2001). PIWI: Enhancing parent-child interaction as a foundation for early intervention. *Infants and Young Children*, 14, 34-45.

McWilliam, P. (2000). *Lives in progress: Case stories in early intervention*. Baltimore: Paul H. Brookes Publishing Company.

McWilliam, R. (2000). Recommended practices in interdisciplinary models. In S. Sandall, M. McLean, & B. Smith (Eds.), DEC *recommended practices for early intervention/early childhood special education* (pp. 47-54). Longmont, CO: Sopris West

McWilliam, R. & Scott, S. (2001). A support approach to early intervention: A three part framework. *Infants and Young Children*, 13, 55-66.

Mirenda, P. (2004). *CAIRN cross-country check-up: BC policy overview, Part one*. Retrieved August 13, 2006, from the Canadian Autism Intervention Research Network Web site: http://www.cairnsite.com/conference/04/docs/BC_policy.pdf

National Child Benefit. (2006). *Northwest Territories NCB programs*. Retrieved October 9, 2006, from the National Child Benefit Web site: http://www.nationalchildbenefit.ca/ncb/maplinknwt.shtml

New Brunswick Department of Health. (2006). *Early childhood initiatives*. Retrieved September 1, 2006, from the Government of New Brunswick Web site: http://app.infoaa.7700.gnb.ca/gnb/Pub/EServices/ListServiceDetails.asp?ServiceID1=10795&ReportType1=A1

Newfoundland Department of Health and Community Services. (2006). *Health and Community Services*. Retrieved September 13, 2006, from the Newfoundland Department of Health and Community Services Web site: http://www.health.gov.nl.ca/health/

Norris, S., Pare, J., & Starky, S. (2006). *Childhood autism in Canada: Some issues relating to behavioral intervention.* Retrieved October 31, 2006, from the Parliament of Canada Web site: http://www.parl.gc.ca/information/library/PRBpubs/prb0593-e.htm

Northwest Territories Department of Health and Social Services. (2006).*Community Action Program for Children.* Retrieved September 4, 2006, from the Northwest Territories Department of Health and Social Services Web site: http://www.hlthss.gov.nt.ca/Features/Programs_and_Services/comm_wellness/capc/community_action_program_for_children.asp

Nova Scotia Department of Community Services. (2006). *Key initiatives*. Retrieved August 26, 2006, from the Government of Nova Scotia Web site: http://www.gov.ns.ca/coms/key_initiatives.html

Nova Scotia Department of Community Services. (2006B). *Children, youth and families: Early childhood development services.* Retrieved August 26, 2006 from the Government of Nova Scotia Web site: http://www.gov.ns.ca/coms/families/early_childhood.html

Nova Scotia Department of Community Services. (2006C). *Early intervention programs in Nova Scotia.* Retrieved August 26, 2006, from the Government of Nova Scotia Web site: http://www.gov.ns.ca/coms/families/early_childhood_intervention.html

Nova Scotia Department of Community Services. (2006D). *The supported child care program: Children with special needs in child care programs.* Retrieved August 26, 2006, from the Government of Nova Scotia Web site: http://www.gov.ns.ca/coms/families/early_childhood_program.html

Nova Scotia Department of Community Services. (2005). *Early childhood development services.* Retrieved April 11, 2006, from the Government of Nova Scotia Web site: http://www.gov.ns.ca/coms/families/early_childhood_intervention.html

Nova Scotia Department of Community Services .(2005B). *Nova Scotia's Early Child Development Initiative and Multilateral Framework on Early Learning and Child Care: Annual report 2003-2004.* Retrieved November, 19, 2006 from the Government of Nova Scotia Web site: http://www.gov.ns.ca/coms/families/pdf/ECD%20Annual%20Report.pdf

Nova Scotia Hearing and Speech Centres. (2006). *Programs*. Retrieved August 26, 2006 from the Nova Scotia Hearing and Speech Centres Web site: http://www.nshsc.ns.ca/programs.html

Noyes-Grosser, D., Holland, J., Lyons, D., Holland, C., Romanczyk, R., & Gillis, J. (2005). Rationale and methodology for developing guidelines for early intervention services for young children with developmental disabilities. *Infants and Young Children*, 18, 119-135.

Nunavut Department of Education and Health and Social Services. (2002). *Nunavut's Early Childhood Development expenditures and programs: Baseline report 2000-2001 and Update 2001:2002.* Retrieved October 11, 2006, from the Government or Nunavut Web site: http://www.gov.nu.ca/education/eng/pubdoc/ECD_baseline_rep_00-02.pdf

Odom, S., & Wolery, M. (2003). A unified theory of practice in early intervention/early childhood special education. Evidence-based practices. *The Journal of Special Education*, 37, 164-173.

Office of the United Nations High Commissioner for Human Rights. (1990). Convention on the Rights of the Child. Retrieved November 20, 2006, from the Office of the High Commissioner for Human Rights web site: http://www.unhchr.ch/html/menu3/b/k2crc.htm

Ontario Association for Infant Development. (1994). *Best practices for infant development programs.* Retrieved November 13, 2006 from the Ontario Association for Infant Development Web site: http://www.oaid.ca/prof_guide.html

Ontario Ministry of Children and Youth Services. (2005). *Children with special needs.* Retrieved April 1, 2006, from the Ontario Ministry of Children and Youth Services Web site: http://www.children.gov.on.ca/CS/en/programs/SpecialNeeds/default.htm#2

Palfry, J., Singer, J., Walker, D., & Butler, J. (1997). Early identification of children's special needs: A study of five metropolitan communities. *Journal of Pediatrics*, 111, 651-659.

Park, J., & Turnball, A. (2003). Service integration in early intervention: Determining interpersonal and structural factors for its success. *Infants and Young Children,* 16, 48-58.

Prince, M. (2004). Canadian disability policy: Still a hit-or-miss affair. *Canadian Journal of Sociology*, 29, 59-82.

Quebec Ministère de la Santé et des Services Sociaux. (2006). *Santé et services sociaux.* Retrieved August 15, 2006, from the Ministère de la Santé et des Services Sociaux Web site :http://www.msss.gouv.qc.ca/index.php

Ramey, C., & Ramey, S. (2004). Early learning and school readiness: Can early intervention make a difference? *Merrill Palmer Quarterly,* 50, 471-491.

Ramey, C., & Ramey, S. (1998). Early intervention and early experience. American Psychologist, 53, 109-120.

Reynolds, A. J., Temple, J., Robertson, D., & Mann, E. (2002). Age twenty-one cost-benefit analysis of the Title I Chicago Child-Parent Centers. *Educational Evaluation and Policy Analysis,* 24, 267-303.

Rogers, M., & Lopez, E. (2002). Identifying critical cross-cultural school psychology competence. *Journal of School Psychology*, 40, 115-141.

Ryan, J. (1983). Introduction to latent trait analysis and item response theory. In W. E. Hathaway (Ed.). Testing in the schools: new directions for testing and measurement, no. 19 (pp. 49-65). San Francisco, CA: Jossey-Bass.

Saskatchewan Department of Community Resources. (2006). *Community resources.* Retrieved April 2, 2006, from the Saskatchewan Department of Community Resources Web site: http://www.dcre.gov.sk.ca/publications/annualreports/9697/cld.html

Saskatchewan Learning. (2002) *Children's Services Policy Framework.* Retrieved April 1, 2006, from the Saskatchewan Learning Web site: http://www.sasklearning.gov.sk.ca/branches/children_services/special_ed/seindex.shtml

Scarborough, A., Spiker, D., Hebbeler, K., Bailey, D., & Simeonsson, R. (2004). A national look at children and families entering early intervention. *Exceptional Children*, 70, 469-483.

Schweinhart, L., Barnes, H., &Weikart, D. (1993). Significant benefits: The High/Scope Perry Preschool Study through age twenty-seven. *Monograph of the High/Scope Educational Research Foundation,* 10. Ypsilanti, MI: High-Scope Educational Research Foundation.

Shannon, P. (2004). Barriers to family-centered services for infants and toddlers with developmental delays. *Social Work*, 49, 301-308.

Siciliani, L., & Hurst, J. (2003). *Explaining waiting times variations for elective surgery across OECD countries.* Retrieved November 19, 2006, from the Organisation for Economic Cooperation and Development Web site: http://www.oecd.org/dataoecd/31/10/17256025.pdf

Simmermon, L. (May, 2002). Autism costs in Canada. Retrieved March 2, 2005, from the Autism Society of Canada Web site: http://www.autismsocietycanada.ca/en/autism_costs_in_Canada.html.

Sladeczek, I., & Amar, D. (2005). *A dynamic assessment of early intervention models in children with developmental delays: Creating a paradigm shift in Early Intervention policy and practice.* Max Bell Foundation, Project Proposal.

Slavin, R., & Madden, N. (2006). Success for All/Roots and Wings: 2006 summary of research on achievement outcomes. Baltimore: John Hopkins University, Center for Research and Reform in Education.

Slavin, R., Madden, N., Cheung, A., Borman, G., Chamberlain, A., & Chambers, B. (2006). *A three-year randomized evaluation of Success for All: Final reading outcomes.* Baltimore, MD: Center for Data-Driven Reform in Education, Johns Hopkins University.

Smith, T., Buch, G., & Evslin Gamby, T. (2001). Parent-directed intensive early intervention for children with pervasive developmental disorder. *Research in Developmental Disabilities*, 21, 297-309.

Statistics Canada. (2001). *A profile of disability in Canada, 2001*. Retrieved November, 19, 2006, from the Statistics Canada Web site: http://www.statcan.ca/english/freepub/89-577-XIE/index.htm

Stayton, V., Whittaker, S., Jones, E., & Kersting, F. (2001). Interdisciplinary model for the preparation of related services and early intervention personnel. *Teacher Education and Special Education*, 24, 395-401.

Thompson, C. (2005). Dotting I's, Crossing T's: Exploring accountability in self-managed care. *Rehabilitation Review*, 16, 1-2.

U.S. Department of Education. (2000). *To assure the free, appropriate public education of all children with disabilities: Twenty-second annual report to congress on the implementation of the Individuals with Disabilities Act*. Washington, DC.

U.S. Department of Justice. (2000). *The High/Scope Perry Preschool Project*. Retrieved October 31, 2006, from the National Criminal Justice Reference Service Web site: http://www.ncjrs.gov/pdffiles1/ojjdp/181725.pdf

Webster, A., Feiler, A., & Webster, V. (2003). Early intensive family intervention and evidence of effectiveness: Lessons from the South West Autism Programme. *Early Childhood Development and Care*, 173, 383-398.

Woods, J., & Wetherby, A. (2003). Early identification of intervention for infants and toddlers who are at risk for Autism Spectrum Disorder. *Language, Speech and Hearing Services in School*, 34, 180-193.

Yukon Health and Social Services. (2005A). *Yukon Health and Social Services*. Retrieved November 22, 2006 from the Yukon Health and Social Services web site: www.hss.gov.yk.ca

Yukon Health and Social Services. (2005B). *Healthy families*. Retrieved October 11, 2006, from the Yukon Health and Social Services Web site: www.hss.gov.yk.ca/programs/family_children/early_childhood/healthy_families

Zinga, D., Bennett, S., Good, D., & Kumpf, J. (2005). Policy and practice: Acquired brain injury in Canadian educational systems. *Canadian Journal of Educational Administration and Policy*, 43, 1-23.

Appendices A: Certificate of Ethical Acceptability

Appendices B: Early Intervention Inventory

Early Intervention Center Questionnaire

Answers marked with a * are required.

1*. Please provide the following information.

Contact Name	
Affiliation	
Address	
City	
Province	
Email Address	
Phone Number	

2. Please provide the following optional information

Fax Number	
Website Address	

3. What is the total number of children enrolled in your centre?

4. What is the age range of children enrolled in your centre? (check all that apply)

- ☐ 0 – 2 years 11 months
- ☐ 3 – 5 years 11 months
- ☐ 6 – 9 years 11 months
- ☐ 10 + years

5. Approximately how many children with a developmental delay in the following age categories are enrolled in your program? [Note: developmental delay is defined as a chronological delay in the appearance of normal developmental milestones achieved during infancy and early childhood, caused by organic, psychological, or environmental factors].

0 - 2 years 11 months	
3 - 5 years 11 months	
6 - 9 years 11 months	

10 + years

6. What types of services are offered through your centre? (check all that apply)

- ASSISTIVE TECHNOLOGY (services that assist a child with a device to aid their functional capabilities
- AUDIOLOGY (services that assist children with/at risk of a hearing related problem, provide auditory rehabilitation and determine individual amplification needs)
- SERVICE PLANNING (services that help families to understand and meet their child's needs)
- MEDICAL SERVICES (diagnostic and evaluative services provided by a licensed physician as part of the child's assessment)
- NURSING SERVICES (services that assess the health status of the child, including the administration of medications)
- NUTRITION SERVICES (services provided by a registered nurse to help address the nutritional needs of the child, including the identification of feeding problems and skills and food habits)
- OCCUPATIONAL THERAPY (services that relate to self-help skills, adaptive behavior and play, and sensorimotor development to improve functional task performance)
- PHYSICAL THERAPY (services to prevent or lessen movement's dysfunction and related functional problems to promote effective environmental adaptations)
- PSYCHOLOGICAL SERVICES (services that assess and address the psychological development of a child including information on learning, mental health, and development)
- SERVICE COORDINATION (services that provide families with partnerships to connect to services in the community and obtain their rights)
- SOCIAL WORK/FAMILY SERVICES (services which work to assess the social and emotional strengths and needs of a child and family, provide individual or group counseling or training and link families with community resources)
- SPECIAL INSTRUCTION (services that involve designing learning environments and activities to promote child development and provide families with information, support and skills)
- SPEECH LANGUAGE PATHOLOGY (services that address speech and/or language development and pathology, such as problems with articulation, language or fluency)
- VISION SERVICES (the evaluation and assessment of visual functioning
- HEALTH SERVICES (health-related services that are required to enable the child to benefit from other early intervention services)
- TRANSPORTATION AND RELATED COSTS (services that cover the cost of travel and parking necessary for the child and family to be able to obtain services)
- CASE REVIEW (annual or semi-annual meetings designed to evaluate and modify the child's treatment plan)
- TRANSITION SERVICES (coordination of services between the centre and school)
- TOY/RESOURCE LIBRARY (a library of resources for parents and children)
- INFANT DEVELOPMENT/STIMULATION (program directed at children 0-3years of age)
- RESPITE SERVICES (services providing temporary relief for families of children with disabilities)

- [ ] PRESCHOOL SERVICES (pre-academic skill building program for children prior to school entry)
- [ ] SCHOOL SERVICES (educational services modified to fit the child's specific needs)
- [ ] SERVICES FOR MEDICALLY FRAGILE CHILDREN (medically necessary services allowing for services to children w/ special medical needs
- [ ] OTHER (Please Specify)

7. Please list the professionals who provide services through your program. (check all that apply)

- [ ] PSYCHOLOGIST (A professional specializing in diagnosing and treating diseases of the brain, emotional disturbance, and behavior problems)
- [ ] PSYCHIATRIST (A physician (M.D.) who specializes in the prevention, diagnosis, and treatment of mental illness)
- [ ] EDUCATIONAL SPECIALIST (An individual that assists children with diverse learning needs by making educational gains by making program accommodations, assisting with the learning process and monitoring success)
- [ ] LICENSED EDUCATOR (a professional with an background in educational instruction (i.e. a teacher)
- [ ] PHYSICAL THERAPIST (therapist who treats injury or dysfunction with exercises and other physical treatments of the disorder)
- [ ] SPEECH LANGUAGE PATHOLOGIST (a professional that provide services to assist people with communication and swallowing difficulties)
- [ ] DIETICIAN/NUTRITIONIST (a specialist in nutrition that can help patients with special needs, allergies, health problems, or diet plans)
- [ ] PARAPROFESSIONAL (any professional with special training in the field that is not necessarily with a professional order)
- [ ] OCCUPATIONAL THERAPIST (a professional that helps with adaptive or sensorimotor skills and works on improving the individual functional skills of the child)
- [ ] SOCIAL/FAMILY SERVICE WORKER (a professional that provides support to the child and family, often with counseling, training and home visitation)
- [ ] PEDIATRICIAN/DEVELOPMENTAL PEDIATRICIAN (a physician who specializes in the care of infants and children)
- [ ] BEHAVIORAL CONSULTANT (a consultant that specializes in the modification and improvement of a child's behaviour eg. poor school performance, problem behaviors)
- [ ] EARLY INTERVENTION SPECIALIST (a certified professional with educational background in service provision for infants and young children in need of special assistance)
- [ ] RECREATION/ART/PLAY/MUSIC THERAPIST (professional using one of those four modalities to improve the functioning of children in need of special services)
- [ ] OTHER (Please Specify)

8. On average, how many hours of service does a child with a developmental delay (in each of the specificied age ranges) receive in a weekly period at your centre?

0 - 2 years 11 months	
3 - 5 years 11 months	
6 - 9 years 11 months	
10 + years	

9. Based on your responses to questions five and six, please allocate the weekly hours into the following professional services.

PSYCHOLOGIST	
PSYCHIATRIST	
EDUCATIONAL SPECIALIST	
LICENSED EDUCATOR	
PHYSIOTHERAPIST	
SPEECH LANGUAGE PATHOLOGIST	
DIETICIAN/NUTRITIONIST	
PARAPROFESSIONAL	
OCCUPATIONAL THERAPIST	
SOCIAL/FAMILY SERVICE WORKER	
OTHER (please specify):	

10. Which service model(s) does your centre employ?

- ☐ HOME AND COMMUNITY-BASED VISITS (services are provided to the child and/or family in the home or other natural environments)
- ☐ CENTRE-BASED VISITS (services to the child and/or family by appropriate qualified personnel at an approved early intervention provider's site)
- ☐ PARENT-CHILD GROUPS (group comprised of caregivers, children and at least one qualified provider of early intervention services at a centre or community-based site (ie. daycare)
- ☐ FAMILY SUPPORT GROUPS (services are provided to family members to enhance their capacity to support, educate, care for and enhance the development of the child)
- ☐ GROUP RESIDENTIAL PROGRAM (services are provided by qualified personnel to a group of children usually

under three years of age at an early intervention centre or community-based setting. Typical peer involvement is common in these programs)

☐ DAY TREATMENT PROGRAM (services are provided by qualified personnel at a centre during the day but children return home at night)

☐ OTHER (Please specify)

11. In general, please check the model that best represents your centre's approach?

○ MULTIDISCIPLINARY (professionals from several disciplines work independently of each other in a side-by-side but separate fashion with parents being responsible for service coordination)

○ INTERDISCIPLINARY (parents and professionals form teams with formal channels of communication. Professionals separately assess cases but teams collaborate on the intervention plan)

○ TRANSDISCIPLINARY (teams composed of parents and professionals cross disciplinary boundaries, maximizing communication and interaction. Families are critical in goal setting and decision making. Mutual training is common and decisions are made by team consensus)

12. On average, how long (e.g., weeks, months, years) does a child/family receive services in your progra

13. Is there a waiting list for assessment in your program?

☐ Yes

☐ No

14. Is there a wait list for services in your program?

○ Yes

○ No

15. On average, how long (weeks, months, years) is the wait list before a child is assessed for services?

16. On average, how long (weeks, months, years) is the wait list before a child is admitted for services?

17. How is your centre funded?

- ○ PRIVATE
- ○ PRIVATE, NOT FOR PROFIT
- ○ PUBLIC

18. Please enter the percentage of funding received from each source.

GOVERNMENT	
PRIVATE	
OTHER (please specify)	

19. On average, what is the range of cost for a complete assessment for the child?

20. What is the average monthly cost for direct services at your centre (please exclude overhead and indirect costs)?

21. Briefly describe the top three priorities of your organization.

22. Please describe what you believe to be the greatest concern(s) of parents?

23. What services do you believe are lacking most at your centre?

24. Please briefly describe the broad challenges that are being faced in terms of early intervention services your province.

25. On a scale of 1 to 10, please rate your general perception of parent satisfaction with your centre/progra (1 = not at all satisfied; 5 = somewhat satisfied; 10=completely satisfied)

26. On a scale of 1 to 10, please rate your overall satisfaction with child outcomes in your centre/program (1 = not at all satisfied; 5 = somewhat satisfied; 10=completely satisfied)

27. On a scale of 1 to 10, how would you rate the adequacy of your professional services and programs in t ability to respond to your client needs (1 = not at all adequate; 5 = somewhat adequate; 10=completely adequate)

28. On a scale of 1 to 10, how would you rate the ability of your government to provide adequate responses children with developmental delays (1 = not at all able to meet their needs; 5 = somewhat able to meet their needs; 10=completely able to meet their needs)

Appendices C: Early Intervention Inventory Consent Form

McGill

yaldei
centre de développement
developmental center

First Canadian National Early Inventory
www.earlyinterventioncanada.com

Dear Colleagues,

The purpose of this survey is to identify Early Intervention (EI) centres across Canada that service young children with developmental delays/disabilities between the ages of 0 and 9 and their families. In gathering this information, our research team will be able to compare, analyze and evaluate the different approaches and models of service delivery prevalent in EI centres across Canada.

The *Early Intervention Canada Research team* has developed a brief survey that can be completed on-line (access www.earlyinterventioncanada.com). The information collected will enable us to better understand the state of affairs of Canadian early intervention efforts, which has a profound impact on the well-being and functioning of families and their children with delays.

The benefits of completing this survey include:

- Providing a comprehensive snapshot of the Early Intervention system in Canada;
- Developing an up-to-date, Canada-wide database that will play an instrumental role in improving our knowledge of existing EI service models;
- Playing a role in developing a province-by province breakdown and evaluation of EI centres across Canada;
- Helping to improve our knowledge of current EI services and identification of gaps and critical issues in EI services;
- Sensitizing EI centers to best practices, success factors, and alternative EI models;
- Motivating EI centers to re-examine practices in light of inventory of other models;
- Encouraging EI centers to add new elements in their intervention approaches;
- Evaluating your own EI centre in comparison to other similar sites.

These results will be published online for public access, however, please note that information concerning specific EI centres will not be provided. The EI research team will ensure confidentiality with respect to specific information concerning your centre and will only publish aggregate data. Your information will be used for research purposes only and adheres to ethical standards set out in the tri-council ethics protocol.

Appendices D: Early Intervention Inventory Debriefing Form