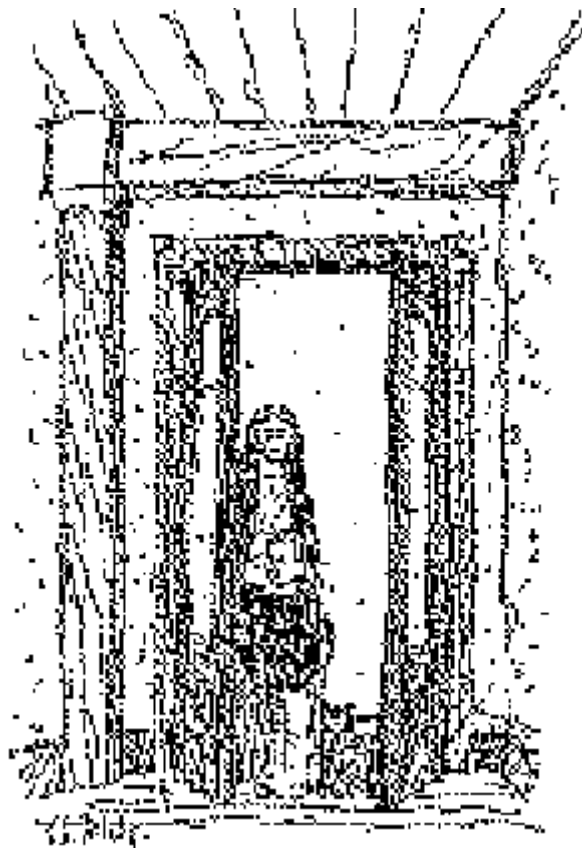


REVERSING THE REAL BRAIN DRAIN

Early Years Study

Final Report



April 1999

Co-chairs: Hon. Margaret Norrie McCain & J. Fraser Mustard

The preparation of this report was funded by
the Ontario Children's Secretariat

To obtain additional copies:

Mail order
or pick up: Children's Secretariat
1075 Bay Street, Suite 601
Toronto, ON M7A1E9

Phone order: Toronto (416) 325-0054

Email: mcss-cmb@gov.on.ca

Website: www.childsec.gov.on.ca

Also available in French

This is a final copy of the full Early Years Study.

The Canadian Institute for Advanced Research
L'Institut canadien de recherches avancées
281

The Founders' Network 401 Richmond Street W., Suite

Toronto, Ontario M5V 3A8
Telephone (416) 593-5999

February 16, 1999

Hon. Michael D. Harris
Premier
Government of Ontario
Room 281, Legislative Building, Queen's Park
Toronto, ON M7A 1A1

Dear Mr. Premier,

Enclosed is the Report from the Early Years Study to you and the Minister Responsible for Children, the Honourable Margaret Marland. This study and its recommendations are the work of the Reference Group and the Co-Chairs.

We examined the evidence from the neurosciences, developmental psychology, social sciences, anthropology, epidemiology and other disciplines about the relationship among early brain and child development and learning, behaviour, and health throughout all stages of life. We consider, in view of this evidence, that the period of early child development is equal to or, in some cases, greater in importance for the quality of the next generation than the periods children and youth spend in education or post secondary education.

We empathize that the children of Ontario can do better and that to improve the early years for young children will require the commitment of all citizens from all sectors in Ontario, its government and the media.


We have set out in the report steps to achieve the goal of improved outcomes for all young children and encourage your government to start the process so that in the next century Ontario will have the best educated and competent population in the world.

We thank you for the opportunity to prepare this report.

Yours sincerely,



Margaret McCain
Co-Chair
Early Years Study



J. Fraser Mustard
Co-Chair
Early Years Study

EARLY YEARS STUDY: Reversing the Real Brain Drain

TABLE OF CONTENTS

Title Page

Letter of Transmittal

Acknowledgements

Preface	1
Summary	5
Chapter 1:	Neuroscience and Early Child Development.....	21
Chapter 2:	Socioeconomic Change and Families and Children	45
Chapter 3:	How Are Ontario’s Children Doing?.....	57
Chapter 4:	The Mismatch of Opportunity and Investment.....	93
Chapter 5:	The Strength and Experience of Ontario’s Community Initiatives in Early Child Development Programs	113
Chapter 6:	A Vision for an Early Child Development and Parenting Framework	131
Chapter 7:	Recommendations	153
References		
Appendix I	Reference Group Members	
Appendix II	Contributors	
Appendix III	Terms of Reference	



ACKNOWLEDGEMENTS

This report is the product of the commitment and work of the Reference Group and the co-chairs, Margaret Norrie McCain and J. Fraser Mustard. The proposed strategy and recommendations are the result of this work.

The Honourable Margaret Norrie McCain is the former Lieutenant Governor of New Brunswick (1994-1997). She is currently involved with numerous initiatives which focus on the elimination of family violence and promote social justice for all women and children in Canadian society. J. Fraser Mustard was the Dean and Vice-President of Health Sciences, McMaster University from 1972 to 1982, and was the founding president of the Canadian Institute for Advanced Research (CIAR) from 1982 to 1996. He is presently the Bell Canada Fellow of the Institute and works through the Founders' Network.

The considerable expertise and knowledge of both co-chairs were invaluable in reviewing the research and guiding the study's investigation of the early years. Together, with the Reference Group members, they are responsible for the final report.

THE REFERENCE GROUP MEMBERS WERE:

- 1) Charles Coffey
- 2) Mary Gordon
- 3) Janet Comis
- 4) Dan Offord
- 5) Julie Desjardins
- 6) Terry Sullivan
- 7) Richard Ferron
- 8) Clara Will
- 9) Florence Minz Geneen
- 10) Robin Williams

(For further information about the Reference Group, please see Appendix I.)

Jane Bertrand was the staff member, on leave from George Brown College, who provided the critical base of support without which we could not have prepared this report.

The co-chairs had generous assistance from members of the Canadian Institute for Advanced Research programs in Population Health, Human Development and Economic Growth. Clyde Hertzman [Director, Population Health] and Dan Keating [Director, Human Development] were very

helpful in providing the knowledge and synthesis concerning the early years of child development and learning, behaviour and health throughout the life cycle. Doug Willms [Human Development Program] played a key role in providing the analysis from the National Longitudinal Survey of Children and Youth in collaboration with Allen Zeesman and his colleagues in Human Resources Canada. Michael Wolfson [Statistics Canada and CIAR Population Health Program] and his colleague, Nancy Ross [Statistics Canada] provided the birthweight analysis for the report and, with the Education Quality and Accountability Office, did the grade three test result analysis for us. We also had helpful input and advice from Max Cynader [CIAR Human Development Program] with respect to the neuroscience story, as well as Steve Suomi and Lew Lipsitt [CIAR Human Development Program] re factors influencing early human and primate development. Robbie Case [CIAR Human Development Program] gave us valuable information in relation to the new understanding about factors influencing the base for mathematical skills in the early years. In sections on economic growth and socio-economic change, we had help and advice from Elhanan Helpman [Director, Economic Growth Program] and Craig Riddell [Economic Growth Program].

Harry Swain [Sussex Circle] guided our exploration of possible financial policy options, including tax incentives. We also received advice from Helmut Tilak [Stikeman Elliot], Karen Watson [KPMG], and Gordon Cleveland [University of Toronto]. A detailed study was specifically prepared for us by economists Arthur Donner [economic consultant] and Fred Lazar [York University].

Community visits and discussions with provincial groups and individuals concerned about early childhood gave advice and insights into what is being done and what communities can do. Kathleen Guy and Dawna Wintermeyer made the community visits possible and Michael Cushing interviewed representatives from numerous organizations. We wish to thank the hundreds of individuals (listed in Appendix II) who talked with us, gave us advice and shared their professional and personal experiences.

Pam Bryant and her staff in the Children's Secretariat (also identified in Appendix II) mobilized the support we needed from the Ontario public service.

Finally, we want to express our appreciation to Cheryl Hamilton for her tireless work in transforming our experiences and knowledge into a written report.

PREFACE

PURPOSE

New understanding of brain development in the early years and its effect on subsequent learning, behaviour and health for individuals has led a number of governments and other organizations to take steps to provide better circumstances in and outside the home for early child development. The Ontario government, recognizing the importance of this period of human development, established the Early Years Study in the spring of 1998 with the following purpose:

The Study will provide options and recommendations with respect to the best ways of preparing all of Ontario's young children - including those at risk or with special needs - for scholastic, career and social success. The development of the whole child, giving consideration to a comprehensive model of seamless supports and early interventions, is of paramount importance. Further, the Study will clarify roles and responsibilities and recommend options for collaborative service models for early learning for children, including local and provincial-level initiatives based on best practices.

In addition, the Early Years Study was asked to consider collaborative and partnership models that would actively engage the federal, provincial and municipal governments, school boards, communities and the private sector.

PROCESS

We began by building a synthesis of the new knowledge base from neuroscience, developmental psychology, human development, sociology, paediatrics, and the determinants of health, learning and economic growth from work in Canada, the United States and Europe to establish a framework of understanding with respect to the early years of child development and the effects on learning, behaviour and health throughout the life cycle. This knowledge emphasizes the need for a continuum of parent-focused and child-focused activities for optimum brain development in the early years.

We discussed this framework of understanding in meetings with a wide range of people and organizations - parents, early child educators, economists, groups representing children with emotional, social and behavioural difficulties and children with learning and developmental disabilities, teachers and their representatives, public health nurses, physicians, community development workers, parenting resource staff, representatives of foundations, all levels of government, and provincial organizations involved with children's issues. Discussions with all these different groups gave us insights into the implications for people, programs and communities. We were told about the need for a more integrated framework for early child development and parenting support.

WHY ONTARIO SHOULD ACT NOW

We know now that development of the brain in the early years of life, particularly the first three years, sets the base of competence and coping skills for the later stages of life. Improving the

prospects for the next generation of Ontarians - with respect to school performance, health and quality of life, and success in the labour market – will improve the future for all of us.

The entrants to the workforce of 2025 will be born next year. From this generation will come a key factor in determining the wealth base of Ontario in 25 years. They will be Ontario's community leaders and innovators in the next century. Brain development in the period from conception to six years sets a base for learning, behaviour and health over the life cycle. Ensuring that all our future citizens are able to develop their full potential has to be a high priority for everyone. It is crucial if we are to reverse "the real brain drain."

Investment by all sectors of society in the early years is as important as our investment in education to ensure Ontario has a highly competent and well-educated population, all necessary for a strong economy and a thriving democracy. Ontario has an opportunity to create a better future for our children and grandchildren - by building on the strong base that exists today and engaging all sectors of society in the establishing of a new "system" for early child development and parenting. That system will provide the base for children's learning and development in the school system and the post-secondary education system. Action now will put our children and our society on a firmer foundation for the future. This action is necessary, not only to keeping a reasonable standard of living, but also because it is the right thing to do for our young children.

There is a downside argument too. The potential consequences of not acting are troublesome. Our society, like most of the Western world, is in a critical period. We are undergoing a major technological, economic and social change, which is placing new demands and strains on people and institutions. During such periods of substantial change, history shows that the most vulnerable group is often the child-rearing generation, especially mothers, as well as children. To strengthen our economy for the future and the liveability of our communities, we must provide the best possible developmental opportunities for the next generation.

We can turn away from this challenge and hope that our helping systems (the schools, social and health services) will be able to cope, even though they tell us they are having increasing difficulty meeting the demand. We can hope that children will "grow out of" behaviour and learning problems that were set in early life, even though evidence suggests that many of them will have great difficulty doing so and will not reach their full potential. We can put more money into policing and correctional systems and other special services, although that will be expensive and unlikely to make a big difference.

Or we can take a major leap into the future, just as we did when we had the chance to provide safe water and immunize all children against diseases that had taken a terrible toll in infancy for centuries. When science provided us with the tools - inoculation against polio, smallpox, diphtheria and other scourges of childhood - we used them. We used them to protect individual children and society as a whole. We have new knowledge today. We must seize the opportunity to use that knowledge to benefit all children.

We believe the priorities and choices are clear.

OUTLINE OF THIS REPORT

This Report lays out the major reasons for our argument that the time is now for a major effort by all parts of society to improve the opportunities for optimal early child development and parenting for all families in Ontario.

- ◆ The **Summary** sets out the key messages of the report.
- ◆ **Chapter 1** lays out the key points on development of the brain and early child development, and the effects of the early years on learning, behaviour and health throughout life.
- ◆ **Chapter 2** sets out the socio-economic context.
- ◆ **Chapter 3** looks at how well Ontario children are doing.
- ◆ **Chapter 4** highlights the mismatch between opportunity and investment in the early years.
- ◆ **Chapter 5** discusses the importance of building on what is working in communities.
- ◆ **Chapter 6** sets out our vision for an early child development and parenting framework to improve the outcomes for the early years for children in all sectors of society.
- ◆ In **Chapter 7**, we make eleven recommendations.

Our recommendations are directed to the Ontario government, which gave the Early Years Study its mandate, but they are also directed to all sectors of society and call for the involvement for the private sector, the media, communities, and other levels of government to help make Ontario the best place in North America to raise children.

- ◆ **References** provide the sources of information and research used for the study.
- ◆ The **Appendices** include lists of the Reference Group members, contributors to the Early Years Study, and the Study's Terms of Reference.

Working papers, available separately from the report include:

- 11) Early child development and parenting initiatives in other jurisdictions.
- 12) Policy instruments for early child development.
- 13) Fact-finding: A synthesis of discussions and recommendations from community visits, provincial organizations and parent focus groups.

OTHER VOICES

The importance of early child development and its effects on the later stages of life have recently been recognized by major organizations around the world. This Report deals with this subject from an Ontario perspective.

"A great many local, and a number of national, efforts have already proven that early child development (ECD) programs can be a wise investment... ECD programs enhance school readiness, increase the efficiency of primary school investments and human capital formation, foster valued social behaviour, reduce social welfare costs, stimulate community development, and help mothers become income earners "

Early Child Development: Investing in Our Children's Future - Mary Eming Young. Proceedings of a World Bank Conference on Early Child Development, Investing in the Future, Atlanta, Georgia, April 8-9, 1996

"The better the care and stimulation a child receives, the greater the benefit - for the national economy as well as the child. The world is finally recognizing that children's rights to education, growth and development - physical, cognitive, social, emotional and moral - cannot be met without a comprehensive approach to serving their needs from birth."

The State of the World's Children 1999 Carol Bellamy, Executive Director United Nations Children's Fund

"While remediable risk factors affecting health occur throughout the life course, childhood is a critical and vulnerable stage where poor socio-economic circumstances have lasting effects. Follow up through life of successive samples of births has pointed to the crucial influence of early life on subsequent mental and physical health and development. "

Independent Inquiry into Inequalities in Health Report, London, The Stationery Office, November 1998

"It is perfectly possible to devise a system that will produce more children and still keep women at work, though it may not come cheap. The principle of free education for school-age children is already entrenched throughout the rich world; there would be nothing incongruous about extending it further down the age range. "

The Economist, p. 16, July 18, 1998

SUMMARY

NEUROSCIENCE AND EARLY CHILD DEVELOPMENT

There is powerful new evidence from neuroscience that the early years of development from conception to age six, particularly for the first three years, set the base for competence and coping skills that will affect learning, behaviour and health throughout life.

The new evidence expands our understanding of:

1. The interplay between nature and nurture in brain development;
2. How extensive brain development is in utero and the first years of life;
3. How nutrition, care and nurturing directly affect the wiring of the pathways of the brain in the early period;
4. How nurturing by parents in the early years has a decisive and long-lasting impact on how people develop, their capacity to learn, their behaviour and ability to regulate their emotions and their risks for disease in later life; and
5. How negative experiences in the early years, including severe neglect or absence of appropriate stimulation, are likely to have decisive and sustained effects.

Stimulation of the brain comes from stimuli passed through the sensing pathways.

For example, when a mother breastfeeds her baby, the child is both receiving good nutrition and experiencing the stimulation of touch, sight, sound, taste, warmth and smell, through the sensing pathways. This experience, like others in early life, drives the wiring of the billions of neurons of the brain which influences or builds the basic capabilities of the brain. The early development of the brain involves both a wiring or connecting of neurons and a pruning or sculpting process. Because the development of different brain functions happens in synergy, the stimulation from sensing systems like vision also affects the wiring and sculpting of neurons concerned with functions of the brain that govern emotional control, arousal and abstract thought.

The word "nurturing", as we use it in this Report, means positive stimulation. "Stimulation" can be good or bad; for example, stimulation from a violent home environment can have negative developmental consequences for young children, leading to adverse responses to stress later in life. We also use the term "engagement" by adults, especially parents, to mean an active, responsive involvement - for example, reading to a toddler on the parent's lap, encouraging and praising a child, or playing a game and laughing together.

There are critical periods when a young child requires appropriate stimulation for the brain to establish the neural pathways in the brain for optimum development. Many of these critical periods are over or waning by the time a child is six years old. These early critical periods include: binocular vision, emotional control, habitual ways of responding, language and literacy, symbols and relative quantity.

There is disturbing evidence that children who do not receive the nutrition and stimulation necessary for good development in the earliest months and years of life may have great difficulty overcoming deficits later. Once the critical periods for brain development are passed, providing the child has not experienced extreme neglect, it is possible to develop the brain's capacity to compensate - but it is difficult to achieve its full potential. Children who receive inadequate or disruptive stimulation will be more likely to develop learning, behavioural or emotional problems in later stages of life (including an increased incidence of juvenile delinquency and crime for males). There is also increasing evidence that many of the risks for health problems later in life (e.g. high blood pressure, Type II diabetes, some mental health problems) are set by the conditions of early life from conception to age five.

There is encouraging evidence that good nutrition, nurturing and responsive caregiving in the first years of life, linked with good early child development programs, improve the outcomes for all children's learning, behaviour, and physical and mental health throughout life. Opportunities for a child to learn by solving problems through play drive the development of multiple sensing pathways in the brain. Simple things like reading and telling stories to a child at 18 months, or joining a three-year-old child to play with a bucket, or helping a four-year-old throw a ball in the playground, are powerful stimuli for brain development in the early years. They are laying the base of brain development for future learning, behaviour and health. A range of different opportunities is required to meet the unique needs and developmental timetable of each child.

The new evidence is a celebration of what good "mothering" has done for centuries. Parents have always known that babies and young children need good nutrition, stimulation, love and responsive care. What is fascinating about the new understanding of brain development is what it tells us about how good nurturing creates the foundation of brain development and what this foundation means for later stages of life.

IN CONCLUSION:

- ◆ New knowledge has changed our understanding of brain development and complements what has been learned about the early years from epidemiology, anthropology, sociology, developmental psychology and paediatrics. We know now that early experiences and stimulating, positive interactions with adults and other children are far more important for brain development than previously realized.
- ◆ It is clear that the early years from conception to age six have the most important influence of any time in the life cycle on brain development and subsequent learning, behaviour and health. The effects of early experience, particularly during the first three years, on the wiring and sculpting of the brain's billions of neurons, last a lifetime.
- ◆ A young child's brain develops through stimulation of the sensing pathways (e.g. seeing, hearing, touching, smelling, tasting) from early experiences. A mother breastfeeding her baby or a father reading to a toddler on his lap are both providing essential experiences for brain development. This early nurturing during critical periods of brain development not only affects the parts of the brain that control vision and other senses, it influences the neural cross connections to other parts of the brain that influence arousal, emotional regulation and behaviour. A child who misses

positive stimulation or is subject to chronic stress in the first years of life may have difficulty overcoming a bad early start.

- ◆ Given that the brain's development is a seamless continuum, initiatives for early child development and learning should also be a continuum. Learning in the early years must be based on quality, developmentally attuned interactions with primary caregivers and opportunities for play-based problem solving with other children that stimulates brain development.
- ◆ The evidence is clear that good early child development programs that involve parents or other primary caregivers of young children can influence how they relate to and care for children in the home, and can vastly improve outcomes for children's behaviour, learning and health in later life. The earlier in a child's life these programs begin, the better. These programs can benefit children and families from all socio-economic groups in society.
- ◆ This period of life is as important for an educated, competent population as any other period. Given its importance, society must give at least the same amount of attention to this period of development as it does to the school and post-secondary education periods of human development.

SOCIOECONOMIC CHANGE AND FAMILIES AND CHILDREN

Developed countries around the world are going through a complex socio-economic transition caused by deep and broad technological change. The current revolution, often described as the Information Age, is being driven by the capability of computer systems to replace some human functions ("chips for neurons").

Economic growth since 1975 in Ontario, as well as Canada as a whole, has not sustained an ever-rising standard of living as it did from 1945 to 1975. The growth in income for individuals under 45 years of age has flattened or declined since 1975. Since the 1970s, transfer payments (e.g. employment insurance, social assistance) have replaced earnings as the main source of income among many low income families with children. Young adults are also working more hours, having fewer children, and waiting longer to have children. Shift work is increasing. Women have become a key part of the labour force. Approximately 65% of mothers of young children are working outside the home. Economic changes and the time demands of work and family are creating pressures for many families with children. A society that values the economic contribution of women and the contribution of parents in raising the next generation must adapt to these realities.

Existing record systems made it difficult to obtain good evidence on whether the changing socio-economic circumstances are affecting how well Ontario's children are doing, compared to the past 20 years. We heard anecdotal accounts from many people involved in the education system that the proportion of children coming to school who are not ready to learn is increasing. We were also told that there is an increased demand for special services for children and families in difficulty.

IN CONCLUSION:

- ◆ Our future depends on our ability to manage the complex interplay of the emerging new economy, changing social environments and the impact of change on individuals, particularly those who are most vulnerable in their formative early years – our children.
- ◆ There is evidence of significant stress on families and early child development in the present period of major economic and social change.
- ◆ A key strategy for improving the capabilities for innovation of the next generation of citizens is to make early child development a priority of the public and private sectors of society.
- ◆ Facing the work, family and early child development challenge is a shared responsibility among governments, employers, communities and families.
- ◆ Since a competent population that can cope with the socio-economic change is crucial for future economic growth, the subject of early child development must be a high priority for a society and its governments.

HOW WELL ARE ONTARIO'S CHILDREN DOING?

With help from the National Longitudinal Survey of Children and Youth (NLSCY) and Statistics Canada, based on a rigorous sampling of Ontario families and children, we examined new evidence about the early years and Ontario's children.

We were able to establish the following:

- 14) At the beginning of life, the rate of low birth weight is a gradient against socio-economic factors. In the higher socio-economic groups, the low birth weight rate in Ontario is less than that for the rest of Canada.
- 15) Ontario children in all socio-economic levels are not doing as well as children in the rest of Canada, based on vocabulary tests at age four and five and mathematics tests at age six to 11. Performance in vocabulary tests is a measure of early brain development and tends to predict how well children will do in the school system, and math scores at a young age are predictive of math achievement later on in school. We now know that a substantial base of mathematical understanding is set in the first few years.
- 16) It is well known that a higher proportion of children in low-income families do not do well academically and socially, compared to children in families with higher incomes. But more children do well, despite unfavourable family economic circumstances, than those who do not. As you go up the scale of family income (or socio-economic circumstances) an increasing percentage of children show better development. However, there is still a number who do not do well, all the way up the scale. This relationship between early child development outcomes and socio-economic circumstances is usually referred to as a gradient.

-
- 17) The NLSCY data show that the two tests (vocabulary and math) are a gradient when assessed against the socio-economic circumstances of the child's family. The proportion of children not doing well is higher near the bottom of the scale than it is at the top. But in all socio-economic groups there are some children who do not do well, and this is proportional to where families are on the socio-economic scale. For example, if 30% of the children in the bottom 20% do not do well, the figure is 25% for the next 20% and so on up the scale. There are three implications:
1. There is no economic cut-off point above which all children do well.
 2. Because of the size of the middle class, the number of children not doing as well as they might, is greater in the middle socio-economic group than in the bottom 20% of the scale.
 3. Programs for quality early child development and parenting must apply to all sectors of society if we wish to decrease the steepness of the socio-economic gradient.
- 18) We found a gradient in behaviour similar to that for vocabulary tests for children at age four and five. These two measures of behaviour and vocabulary are estimates of brain development in the early years and are part of what is called a "readiness to learn" measure. These measures are predictive (in aggregate for populations) of subsequent learning success in school, mathematical performance, and rates of juvenile delinquency. The behaviour measure's gradient for Ontario appears to be similar to that in the rest of Canada.
- 19) Ontario's gradient in youth literacy (from a cross-Canada study) is steeper than that of Quebec and the Prairie Provinces, and Canada has a poorer performance than a country like Sweden. Early child development has a significant effect on literacy.
- 20) Because there are many Ontario children across the socio-economic spectrum who are performing below what is expected for their age group, it is clear that income is not the only factor. The NLSCY provides some evidence that a key factor is the quality of parental interaction with children in the early years. This finding emphasizes the importance of education and support for parents in early child development initiatives. The NLSCY also found that children from families who are low on the socio-economic scale and who have access to early child development programs outside the family do better than children who do not. This finding is compatible with other studies of early child development over many years.

If Ontario wants to keep track of how its children are doing, we will need to improve our capacity to monitor key measures of development in the early years. A readiness to learn measure (that covers development in physical health and well-being, social competence, emotional maturity, language, general knowledge and cognitive skills) should be done at entry to school. Because the health of children is integral to their abilities to grow and learn, other measures of health status for Ontario's children also need to be improved. In many developed countries immunization status is viewed as a "social biopsy", reflecting in an indirect way how children are doing. The monitoring of immunization rates of two-year-olds could be done through improved access to billing data (through vaccine-specific billing codes) and could become an important component of outcome measures of early child development.

IN CONCLUSION:

- ◆ The evidence we have presented on the early years of child development shows that Ontario can do better. The steps that can improve outcomes and what we can do to improve performance in all sectors of society are clear.
- ◆ The evidence we have been able to obtain shows that there are significant numbers of children whose performance can be improved across the socio-economic spectrum. Therefore, children from all socio-economic levels can benefit from programs in early child development and parenting.
- ◆ Parenting was identified as a key factor in early child development for families at all socio-economic levels. Supportive initiatives for parents should begin as early as possible - from the time of conception - with programs of parent support and education.
- ◆ Ontario's approach to early child development should be universal in the sense that programs should be available and accessible to all families who choose to take part. There should be equal opportunity for participation, and all children should have equal opportunity for optimal development. Targeted programs that reach only children at risk in the lower socio-economic group will miss a very large number of children and families in need of support in the middle and upper socio-economic sectors of society. We are not using the term universal to mean government-mandated and -funded programs. We mean community initiatives to create the necessary child development centres and parenting supports taking into account cultural, linguistic, religious and other characteristics that are important for families in the early period of child development.
- ◆ Children ensure that a society goes on and determine the quality of that society. Societies and governments have an obligation to the future to devise systems that ensure effective parenting, support good early child development, and take into account socio-economic factors associated with a changing economy and the increasing participation of women in the labour force.
- ◆ Ontario should have a province-wide monitoring system to tell us how our children are doing by school entry and at earlier stages where feasible. A "readiness to learn" measure (brain development in the first five years) will enable communities and governments to define areas of need and as certain whether action to improve and expand early child development initiatives is making a positive difference. It must be emphasized that this is NOT an individual measure and cannot be used to label or group children by their ability. Improved monitoring of immunization at age two will provide a measure of health status and should be included, as well as birth weight, in a new early child development outcome strategy.

THE MISMATCH BETWEEN OPPORTUNITY AND INVESTMENT

There are approximately 900,000 children up to the age of six in Ontario. Every year, about 150,000 babies are born. There are also immigrant families arriving in Ontario with infants and young children.

We reviewed what is available in Ontario for children for early child development from conception to age six.

- 21) Kindergarten is the only program provided across Ontario for all children under six. Kindergarten is an interface between early child development and the formal, compulsory school system. In light of what we now understand about brain development, we have included junior and senior kindergarten in the framework of early child development programs. All school boards are required to offer senior kindergarten for five-year-olds, and 95% of all five-year-olds attend. Junior kindergarten for four-year-olds is discretionary for school boards. In September 1998, 68 of 72 District School Boards offered either junior kindergarten or an alternative early learning program. Through senior and junior kindergarten, the school system serves about 330,000 children (190,000 children in senior kindergarten and 140,000 in junior kindergarten). Many senior kindergartens and most junior kindergartens are half-day or alternate-day. Parents who work outside the home still have to find another program for their children the rest of the time.
- 22) Child care is used by many families across Ontario, but it is not part of a universal public system accessible to everyone, like kindergarten. Child care is a broad category with a mixture of public and private funding and service delivery. Parents are pretty much on their own when it comes to making child care arrangements. It depends on what is available in their neighbourhood, the specific needs of the family, and how much they can afford to spend on fees for child care. Regulated child care, either in a child care centre, nursery school or in regulated family childcare, serves an estimated 105,000 children under six. Most of these programs involve early child development. There is provincial-municipal funding to subsidize approximately 55,000 of those child care places for low-income families and children with special needs. Eligibility for subsidy varies by municipality. The availability of subsidized child care spaces depends on the community; some have long waiting lists, while others are reasonably well supplied with places. There is also a provincial wage subsidy for child care workers. Regulated child care represents only a small portion of child care arrangements that parents make. Only about 10% of all children zero to six 12 years are in a regulated child care setting before grade one.
- 23) Other family support and early childhood programs include a range of supports to parents and children. Some of the most innovative community-based programs that members of the Early Years Reference Group visited fall into this category. They include: family resource programs; child care resource programs; parenting and family literacy centres; the federal Community Action Programs for Children; the provincial Better Beginnings, Better Futures projects; recreation and cultural programs for young children and their families; and a range of pre/postnatal supports. Some of these initiatives are targeted to what are termed ‘at-risk’ neighbourhoods and/or families. It is difficult to say how many children and families are served by these programs, but the numbers are estimated to be relatively small, compared to the total population under six. The majority of all children and their families, including those in the middle and upper socio-economic groups, could benefit from early child development and parenting programs.
- 24) Early identification and intervention programs serve children and their families who have special needs, who are having difficulties, or who are considered to be at risk. For example, all infants

are now screened through a province-wide program called Healthy Babies, Healthy Children. The program identifies families who are considered to be at serious risk and provides intensive home visiting. This initiative can enhance the understanding, coping skills and self-esteem of parents. Because this is a new program, it is still under development. At this point, the screening part of the program touches everyone, but the support it provides to families through home visiting is narrowly targeted. As the program evolves, however, it could become an important base to enhance participation in early child development and parenting centres. Other examples of early identification and intervention programs include the Infant Development Program and the Preschool Speech and Language Program.

- 25) Other services that affect young children and their families include: specialized services for children and families (which provide, for example, mental health services, services for children with physical disabilities and child protection services); Public Health, which is mandated by law to provide a number of health services to communities; and Medical Services, which are covered by the Ontario health plan.

Provincial expenditures on programs for children up to age 18 are considerable (about \$17 billion). The bulk of this funding starts at school age, after the most crucial period of brain development. The amount of expenditure per child per year is approximately \$2,800 up to age six (including the costs of senior and junior kindergarten), compared to approximately \$7,250 per year from age six to 18. Of the total expenditure on the under-six age group, less than one-third can be considered to be for programs that are universal - that is, available and accessible to all families in Ontario.

There is a long history in Ontario of provincial initiatives and investment in early child development. Recent initiatives by the current government have continued to build the base of support for the early years and include the following:

- 26) Ontario now has a Minister Responsible for Children, who monitors policies affecting children across the government and advises the Premier and Cabinet.
- 27) This Early Years Study was established.
- 28) The Healthy Babies, Healthy Children program has been launched, with a commitment of \$50 million annually, to promote quality early child development through screening of all newborns and providing home visiting for high-risk families.
- 29) A new Preschool Speech and Language Program (\$20 million) is identifying and helping young children with speech and language difficulties.
- 30) The Office of Integrated Services for Children, reporting to the Ministries of Health, Education and Training, Community and Social Services, and Citizenship, Culture and Recreation, is supporting collaboration in provision of services.
- 31) The Ontario Child Care Supplement for Working Families provides low-to-middle income families up to \$1,020 per year per child under age seven. It is estimated that more than 210,000 families with as many as 350,000 children could benefit.

32) The Ontario Workplace Child Care Tax Deduction gives businesses a 30% tax deduction for the capital cost of building or expanding on-site child care facilities or for contributions to facilities in the community that care for the children of working parents.

Governments over the years have been helping to build programs that support early child development, but much of the investment has been in programs that target at-risk families and neighbourhoods or that provide clinical or treatment services for children and families who have developed difficulties or disabilities, in some cases because of poor early child development.

There is an assortment of community-based initiatives, funded by federal, provincial and municipal governments and school boards, voluntary and private sector contributions, and 14 parent fees that operate components of quality early child development and parenting centres.

However,

1. There is a patchwork of programs, but no coherent system that can meet the diverse needs of all families and their children.
6. While there are some excellent initiatives operating in communities, they only serve a fraction of the families with pre-school children.

IN CONCLUSION:

- ◆ Ontario spends a considerable amount on children. It invests about two-and-a-half times more annually on children after they enter the school system than before. Less than a third of the expenditure on the younger age group is for programs that can be considered "universal" in terms of support for early child development and parenting and are not primarily treatment services for children with problems.
- ◆ There is a long history in Ontario of provincial and community initiatives and investment in early child development. What has evolved since most of the initiatives were started for specific problems is a patchwork of programs primarily for treatment, rather than an integrated system of centres for early child development and parenting that is readily available and accessible to all young children and families.
- ◆ Since all families and children, in all socio-economic circumstances, can benefit from early child development and parenting programs, it is important that programs evolve to be available and accessible to all families in all socio-economic groups.
- ◆ Over time, increased community-based initiatives and investment (public and private) in early child development and parenting, will pay off through a population with better competence and coping abilities for the new global economy. The provincial government has to play an important leadership role in the development of early child development initiatives and help ensure that they are sensitive to local community needs. This investment will be much more cost-effective than paying for remediation later in life, such as treatment programs and support services for problems that are rooted in poor early development.

-
- ◆ Other jurisdictions in the developed (United States and Europe) and the developing (UNICEF and World Bank) world are now taking steps to support good early child development for all children in their communities.

BUILDING ON WHAT IS WORKING IN COMMUNITIES

Members of the Early Years Reference Group made a number of site visits to early child development initiatives in several communities around Ontario to see how they are working. We found that many community initiatives are highly effective at integrating provincial and federal government programs and community resources through collaboration at the community level. This collaboration tends to depend on community initiative and ingenuity to overcome jurisdictional, funding and administrative barriers.

We also met with groups of parents, kindergarten and primary school teachers, early childhood educators, family support staff, health care professionals, individuals with specific expertise in early child development, and many others, including a range of provincial-level organizations concerned with children. The groups are all listed at the back of our Report.

Among the many things we learned from our discussions are the following:

- 33) Ontario should build on existing community strengths and capacity.
- 34) Parents must be a key part of early child development programs.
- 35) Day care which provides early child development is an important component families need.
- 36) Ontario and its communities can and should make better use of existing public resources and facilities, especially schools, for early child development.
- 37) A coherent and comprehensive approach to early child development and parenting programs at the provincial level is needed to support the development of centres at the local level.
- 38) Arts and recreation should not be overlooked as a way to promote good early child development.
- 39) There is collaboration among provincial and community agencies and organizations, and early child development. Policing is one example.
- 40) Bringing business partners on-side may require some incentives.
- 41) There are models in communities that can be shared. But local initiative and community diversity must be respected.
- 42) Community leadership must be empowered and supported.
- 43) The private sector can and should provide leadership and financial support for early child development and parenting in the workplace and elsewhere in the community.
- 44) Targeting measures to support children and families who are at risk or having difficulties is necessary, but it works best within a system available to everyone.

-
- 45) Parents across the socio-economic spectrum could use advice and support in enhancing their parenting skills.
 - 46) Early child development and parenting initiatives must include all children, including those who are living with special difficulties and challenges.
 - 47) Resources for the early years should not be increased at the expense of services that are helping older children and youth overcome disabilities and disadvantage.
 - 48) A capacity to share information and promote public understanding of the early years story needs to be developed.

There is a substantial community base on which to build a program of early child development and parenting centres throughout Ontario, both for families and for children from conception until the time when they enter the school system. Funding for existing initiatives comes from a variety of sources (governments, foundations, charitable donations, fees and the private sector). A number of these effective early child development centres operate on a "hub and spoke" model, with a central base providing expertise and support to a network of home-based programs (or other "satellite" locations) to ensure maintenance of quality and access to specialized services for children and families in need. They provide a comprehensive model of seamless supports and access to early intervention for families in need.

We were struck by the breadth of community involvement. There are mothers receiving social assistance who have acquired the skills and confidence to make an important contribution to the work of community initiatives. There are grandparents who have become the backbone of support for and participation in early learning and parenting programs. There are retired business people who have given their expertise to get innovative community projects off the ground. There are foundations that have identified early child development as a priority for financial support. There are community organizations that have focused interest on and committed resources to the development of good models to support parenting and young children's optimal development.

Schools are a key location for many of the hubs. We heard concerns that changes in education may jeopardize the use of schools as sites for early child development and parenting centres, either because the schools themselves will close, or because there will be no affordable space for programs (such as child care centres which are now located in many schools). The Francophone community is concerned about the potential loss of its full day kindergarten programs, which help this community preserve its linguistic and cultural identity.

Quality kindergarten programs are logically part of an early child development and parenting program. The challenge, given our existing institutions and resources, is how to link this program to the earlier years. Kindergarten can be considered as much a part of early child development as part of the education system. Ideally, early child development programs and the school system should be part of a continuum for children that extends from the early years through to adulthood. The brain develops in a seamless manner and what happens in the first years sets the base for later learning in the formal education system. However, there are many complex issues to be resolved to achieve a more effective interaction and collaboration between early child development and education.

IN CONCLUSION:

- ◆ In most rural and urban communities there are initiatives in both the public and private sector on which to build a stronger and broader range of early child development and parenting centres for all Ontario's children.
- ◆ Government programs, wherever possible, should be designed to integrate with community-based initiatives and not handicap the building of partnerships and trust at the community level.
- ◆ Initiatives for early child development that appear to be strong involve as many components of the public and private sector and local governments as possible.
- ◆ Social entrepreneurs are an important source of community leadership. The government might consider establishing a fund to support the initiatives of social entrepreneurs. Strategies for supporting these initiatives at the community level are important.
- ◆ A variety of sites can be used for early child development and parenting, ranging from business sites and schools to homes that are part of a hub and spoke system. It is important that sites be easily accessible for parents.
- ◆ The early child development and parenting centres must implement quality programs that enhance early child development and be sensitive to the following:
 - i. Cultural, ethnic, linguistic and community diversity;
 - ii. Complex intergovernmental issues;
 - iii. Optimum use of existing resources; and
 - iv. Standards and outcome measures set by government which are sensitive at the community level.

In light of all of the points, it is our view that an evolutionary approach to establishing community-based early child development and parenting centres should be adopted which builds on existing community initiatives. We should use this approach to establish, over time, centres available and accessible to children from all sectors of our society. Because of the importance of the early years and the need for support from all sectors of society, the framework for development and incentives should be designed to involve governments and the public and private sectors in communities.

A VISION FOR AN EARLY CHILD DEVELOPMENT AND PARENTING PROGRAM

We know that:

- 49) The changing socio-economic circumstances of today's society poses a major challenge to our institutions that affects families and their children's development in the early years.
- 50) We now understand how the early brain development sets a base for learning, behaviour and health throughout life.

-
- 51) A society that wants to have a highly competent population for the future to cope with the demands of the emerging knowledge-based world and global economy will have to ensure that all its children have the best stimulation and nourishment during the critical early years of development, regardless of family circumstances.
 - 52) The changing nature of families requires increased support for parents outside the traditional inter-generational support systems.
 - 53) Investments in the early period of life are as important as investments in education, post secondary education, and health care.
 - 54) Investment in the early years will have a substantial long-term economic gain for society.

We envision the development of a system of early child development and parenting centres to support children from conception to formal school entry (grade one), and their families. This concept ensures optimum parenting and early child development support for the most sensitive period of brain development. Such a system will build on and integrate the many public and private sector initiatives in Ontario, including licensed child care programs and nursery schools, kindergarten, other family support and early childhood programs, and early intervention services.

In this section, we discuss:

1. The elements of early child development and parenting centres; and
2. How to navigate the course between vision and implementation of other components of the framework including increased parental and maternity leave and benefits; family-friendly workplaces; tax incentives; an integrated, independent outcome measurement; and community information networks.

Early Child Development and Parenting Centres

Early child development and parenting centres are part of an integrated framework for the prenatal period, and for children zero to six years and their families, based on critical periods of brain development.

Early child development and parenting centres deliver a variety of adult-oriented and child oriented-activities. The selection and organization of specific activities are driven by local needs and are sensitive to diverse cultural and linguistic backgrounds.

The following principles lay the foundation for the early child development and parenting program:

1. Early child development and parenting centres that are available, accessible, affordable and optional for all young children and families in Ontario from conception to entry into grade one in the school system (parents may choose to bring their children or not);
2. Quality parenting and early child development centres that are both parent oriented and child-oriented;

-
3. Early child development programs that are environments for children to engage in play-based, problem-solving learning with other children and adults;
 4. Responsive relationships between adults (early child development staff and parents) and children that increase the potential of play-based learning;
 5. Quality programs that teach family literacy and numeracy to parents and other caregivers from diverse cultural, ethnic and linguistic backgrounds;
 6. Parenting programs that support parents and other caregivers in all aspects of early child development;
 7. Parent participation in early child development programs that enhances the child's early learning and optimal development in the home environment;
 8. Appropriate supports and expertise that are available to allow all children to participate fully, regardless of physical, developmental, language, learning or behavioural difficulties;
 9. Ability to provide special efforts that may be necessary to engage some families and children whose circumstances make it difficult for them to be involved in the early child development and parenting centres;
 10. Early child development and parenting centres, regardless of location, that are linked to the local primary school and with other institutions such as libraries, recreation, and cultural activities in their communities;
 11. Early child development and parenting centres that provide a flexible continuum of services to meet the needs of children and parents at home, at work and in school; and
 12. The effectiveness of early child development centres that are monitored using a developmental readiness-to-learn measure when children enter the school system.

The structure of early child development and parenting centres must be sensitive and responsive to local communities - there is no single institutional structure. The central components will include:

- i. Early child development and parenting activities at the centre;
- ii. Home visiting;
- iii. Home-based satellites; and
- iv. Early problem identification and intervention.

Active outreach or extra efforts will be directed towards families who need additional supports or extra encouragement to take advantage of a service.

Navigating the Course Between Vision and Implementation

The present early child development and parenting initiatives involve a collection of services and programs for young children and their families. The Early Years Reference Group believes that these initiatives should be expanded and integrated into an early child development and parenting

program made up of community-based centres that will benefit Ontario's young children and their parents.

Provincial government leadership within and outside of government can forge a framework of understanding and a strategy to develop the capacity at the community level to establish early child development and parenting centres that are sensitive to the needs of the community. The framework will include the integration of legislation, common standards and the identification of appropriate funding mechanisms for centres which are available, accessible and affordable for all young children and their families.

The provincial government and communities will need to address numerous issues in bringing together the current array of early years initiatives.

Other Components of an Early Child Development System

The early child development and parenting centres provide flexible supports to young children and their families. But in order to be effective, they must be supported by the other components of the system:

- 55) Increased maternity and parental leave benefits protect and promote the health and well-being of infants during the first year of life. These provisions will support healthy interactions, increased breastfeeding and establish the foundation for good parenting.
- 56) Family-friendly workplaces allow parents some flexibility when they need it. Options include flexible work arrangements, unconditional paid leave days, use of employee payroll benefits and workplace early child development and parenting centres. Some workplaces can be a base for early child development and parenting centres.
- 57) Tax incentive options can encourage public and private sector cost sharing for early child development and parenting centres, promote community innovation, and encourage the support of the private sector.
- 58) The development and implementation of outcome measures for early child development, such as age two immunization rates and a readiness-to-learn measure prior to entry into grade one, is a measure of early brain development, just as low birthweights are a measure of prenatal development. Outcome measures for early child development must be linked to other health and learning data to provide information about how well all children are doing at different stages of development. Community-based information networks have the potential to increase the public's understanding of early child development and parenting initiatives and to promote information sharing among groups across the province.

IN CONCLUSION:

- ◆ Society's support for early child development is dependent on the understanding and appreciation among all members of society of the fundamental importance of the early period of human development. To improve the outcomes for all children in their early years, there has to be a willingness to create and support the development and operation of early child development and

parenting centres. The involvement of the different sectors of society, both public and private, is crucial for creating the centres and the integration among the different sectors of society to help build what has been described as social capital or social cohesion, which is thought to be a key factor in long-term economic growth and the maintenance of tolerant democratic societies.

- ◆ We also recognize that early child development and parenting centres have to be sensitive to cultural, ethnic, linguistic and other characteristics of communities and families, to all children's needs and abilities, and should be located in diverse sites, ranging from homes to schools or business properties. The development of a range of centres to provide diverse choices cannot be done on a centralized, bureaucratic model. Therefore, we have adopted the concept of community-based development of early child development and parenting centres, involving the private sector as well as the public sector. In many ways this is similar to how we have developed the post-secondary education system rather than the education system.
- ◆ Centres should be available, accessible, affordable and optional for parents from all sectors of society. The program should promote equal opportunity for optimal development for all children in the early years. Development of the new program will require a realignment of existing initiatives along a continuum.
- ◆ The whole system that we envision includes:
 - i. Early child development and parenting centres in communities, involving the public and private sectors;
 - ii. Improved maternity/parental leave benefits for parents;
 - iii. Family-friendly workplaces;
 - iv. Tax incentives for development of new centres in communities;
 - v. An integrated, independent outcome measure of human development; and
 - vi. A network for community information sharing.
- ◆ What we envision will be a first "tier" program for early child development, as important as the elementary and secondary school system and the post-secondary education system. The system should consist of community-based centres operating at the local level within a provincial framework.

CHAPTER 1

NEUROSCIENCE AND EARLY CHILD DEVELOPMENT

The Early Years Study began by looking at the new evidence from many disciplines, including sociology, neuroscience, paediatrics, epidemiology and developmental psychology, about:

- 59) The crucial nature of development, particularly brain development, in the early years and its effects on learning, behaviour and health in later stages of the life cycle; and
- 60) The importance of experiences and environments on early child development including the active engagement of parents.

The merging of the neuroscience story with the developmental story has increased our understanding of how fundamental the first years of a child's life are in laying the base for the future. We are beginning to understand the linkage between the way the brain develops and the neurological and biological pathways that affect learning, behaviour and health throughout life.

The new evidence is a celebration of what good mothering has done for centuries. Parents have always known that babies and young children need love and care. What is fascinating about the new understanding of brain development is what it tells us about how good nurturing; good nutrition and good health in early life create the foundation for brain development, and what this foundation means for later stages of life.

Ī The word "nurturing", as we use it in this Report, means positive stimulation. "Stimulation" can be good or bad; for example, stimulation from a violent home environment can have negative developmental consequences for young children, leading to adverse responses to stress later in life. We also use the term "engagement" by adults, especially parents, to mean an active, responsive involvement - for example, reading to a toddler on the parent's lap, encouraging and praising a child, or playing a game and laughing together.

This chapter focuses on six key points drawn from neuroscience and early child development, drawing on evidence from human development and animal studies.

The key points we discuss are:

1. Early brain development is interactive, rapid and dramatic.
2. During critical periods, particular parts of the brain need positive stimulation to develop properly.
3. The quality of early sensory stimulation influences the brain's ability to think and regulate bodily functions.
4. Negative experiences in the early years have long-lasting effects that can be difficult to overcome later.
5. Good nutrition and nurturing support optimal early brain and physical development and later learning and behaviour.
6. There are initiatives that can improve early child development.

EARLY BRAIN DEVELOPMENT IS INTERACTIVE, RAPID AND DRAMATIC

For a long time, developmental psychologists have studied how children grow and learn by observing and testing their behaviour and abilities at different ages. But their findings about the importance of early child development and its possible long-term effects did not catch public attention. In the last 10 to 15 years, there has been an explosion of knowledge from neuroscience about the brain and the relationship between development in the early years and learning, behaviour and health risks in the later stages of the life cycle. Discoveries have come from basic research in neuroscience, from new technologies that allow neuroscientists to take pictures of the human brain and study its activity at different stages of development, from research in neurobiology, and from integration of the new knowledge.

Prior to the discovery of this awesome new evidence about early brain development, it was widely believed that the architecture of the brain was pretty well set at birth by the individual's genetic characteristics inherited from the parents. Scientists have now discovered that a tremendous amount of brain development occurs between conception and age one. There is also new understanding about how the stimuli from a child's experiences before the age of three influence the "wiring" of the nerve cells (neurons) and neural pathways of the brain. The active interplay of early stimulation of the brain through the sensing pathways with the basic genetic structure of the brain has a direct and decisive effect on a child's brain development, which has a long-term impact on the adult the child will become. Human development is not a matter of nature versus nurture, but rather the interplay of nature and nurture together.

Considerable brain development takes place before birth. At the beginning of the embryonic period (two weeks after conception), the neural tube, which will form the brain and spinal cord, is formed. From a few initial cells, the brain produces billions of neurons. Most of a human's lifetime supply of brain cells is produced between the fourth and seventh months of gestation. Once the neurons are formed, they must migrate to the correct location and form their connections. A massive migration of cells takes place when the foetus is about four and a half months old.¹

A full-term baby comes into the world with billions of neurons which have to form quadrillions of connections to function effectively. In response to stimuli from the environment through the sense organs (for example, eyes, ears, nose, tongue, skin, muscle joints), the neurons in the relevant part of the brain form connections, called synapses, that allow the brain to recognize the signals of the neural pathways connected to the sensory organs. There is an intensive spurt in production of synapses and neural pathways during the first three years, particularly *in utero* and during the first year; it continues with decreasing activity until age 10, and for some functions extends throughout life. This process is often referred to as brain wiring.

At the same time that the brain is being wired in the early period of development, there is an important process of pruning away neurons, synapses and even entire neural pathways that are not being stimulated. Those that are not used or are not efficient are eliminated. This crucial pruning process is likened to sculpting because the emerging patterns, which will last a lifetime, are being shaped (embedded in the mass of cells), as the excess is being removed.

A report on *Rethinking the Brain* from the Families and Work Institute in the United States (by Rima Shore) provides a useful description of this process of brain development:

“When some kind of [sensory] stimulus activates a neural pathway, all the synapses that form that pathway receive and store a chemical signal. Repeated activation increases the strength of that signal. When the signal reaches a threshold level (which differs for different parts of the brain) something extraordinary happens to that synapse. It becomes exempt from elimination - and retains its protected status into adulthood. Scientists do not yet fully understand the mechanism by which this occurs; they conjecture that the electrical activity produced when neural pathways are activated gives rise to chemical changes that stabilize the synapse.”²

The new understanding of how sensory stimulation - such as touch, vision, sound, pain, taste, smell, temperature and positioning (proprioception system) - affects the structure and function of the brain during early life has changed our views about brain development. Shore and her colleagues have outlined this change in understanding, summarized in the following chart.³

RETHINKING THE BRAIN	
- OLD THINKING -	- NEW THINKING -
HOW A BRAIN DEVELOPS DEPENDS ON THE GENES YOU WERE BORN WITH.	HOW A BRAIN DEVELOPS HINGES ON A COMPLEX INTERPLAY BETWEEN THE GENES YOU ARE BORN WITH AND THE EXPERIENCES YOU HAVE.
THE EXPERIENCES YOU HAVE BEFORE AGE THREE HAVE A LIMITED IMPACT ON LATER DEVELOPMENT.	EARLY EXPERIENCES HAVE A DECISIVE IMPACT ON THE ARCHITECTURE OF THE BRAIN, AND ON THE NATURE AND EXTENT OF ADULT CAPACITIES.
A SECURE RELATIONSHIP WITH A PRIMARY CAREGIVER CREATES A FAVOURABLE CONTEXT FOR EARLY DEVELOPMENT AND LEARNING.	EARLY INTERACTIONS DON'T JUST CREATE THE CONTEXT, THEY DIRECTLY AFFECT THE WAY THE BRAIN IS "WIRED".
BRAIN DEVELOPMENT IS LINEAR: THE BRAIN'S CAPACITY TO LEARN AND CHANGE GROWS STEADILY AS AN INFANT PROGRESSES TOWARDS ADULTHOOD.	BRAIN DEVELOPMENT IS NON-LINEAR: THERE ARE PRIME TIMES FOR ACQUIRING DIFFERENT KINDS OF KNOWLEDGE AND SKILLS.
A TODDLER'S BRAIN IS MUCH LESS ACTIVE THAN THE BRAIN OF A COLLEGE STUDENT.	BY THE TIME CHILDREN REACH AGE THREE, THEIR BRAIN'S ARE TWICE AS ACTIVE AS THOSE OF ADULTS. ACTIVITY LEVELS DROP DURING ADOLESCENCE.
SHORE (1997)	

DURING CRITICAL PERIODS, PARTICULAR PARTS OF THE BRAIN NEED POSITIVE STIMULATION TO DEVELOP PROPERLY

Evidence about the important effect of sensory stimulation on brain development came from the Nobel prize winning work of David Hubel^{4,5} and Torsten Wiesel.^{5,6} They were puzzled by what

happened to the vision of children born with congenital cataracts. When the cataracts were removed, these children did not develop normal vision. On the other hand, the vision of adults who developed cataracts returns to normal after the cataracts are removed. Their research led Hubel and Wiesel to conclude that the cortex of the infant brain linked to the optic nerve needed the stimulation of coping with the sensory signals from the eye to establish the nerve connections to perceive what the eye sees. (See Figure 1.1) Since the removal of the cataracts in young children did not lead to the development of normal vision there had to be a critical period when sensory stimuli from two eyes lead to the wiring of the visual cortex.

Their work pioneered the concepts that:

- 61) The sensing pathways of the body have a crucial effect on the development of the brain in the early years of life; Shore (1997)
- 62) There is a critical or sensitive period for sensing pathways, such as vision, to stimulate the wiring of the neurons in the relevant part of the cortex; and
- 63) When visual stimulation is not available in the critical period, and deficits occur in the development of the cortex responsible for vision, they are not correctable at later stages of development.

The degree of brain plasticity (critical period) is related to two main factors - the stage of development and the brain area or system.

Critical or sensitive periods are stages of development for particular parts or functions of the brain. They are windows of opportunity in early life when a child's brain is exquisitely primed to receive sensory input and develop more advanced neural systems, through the wiring and sculpting processes.

The human brain can be grouped into four key components: the brain stem, the midbrain, the limbic area and the cortex. Each component is responsible for different functions. The brain includes many interacting and interconnected systems composed of neural networks. The various systems work together to carry out specific functions, such as sensing (vision, hearing, etc.) and responding (arousal, emotion and thinking) in different areas of the brain:

- 64) The cortex is a complex area and is responsible for abstract cognition and language systems;
- 65) The limbic area is responsible for aspects of emotion, including regulation and attachment;

FIGURE 1.1 - FIGURE 1.1 – THE EYE-BRAIN CONNECTION

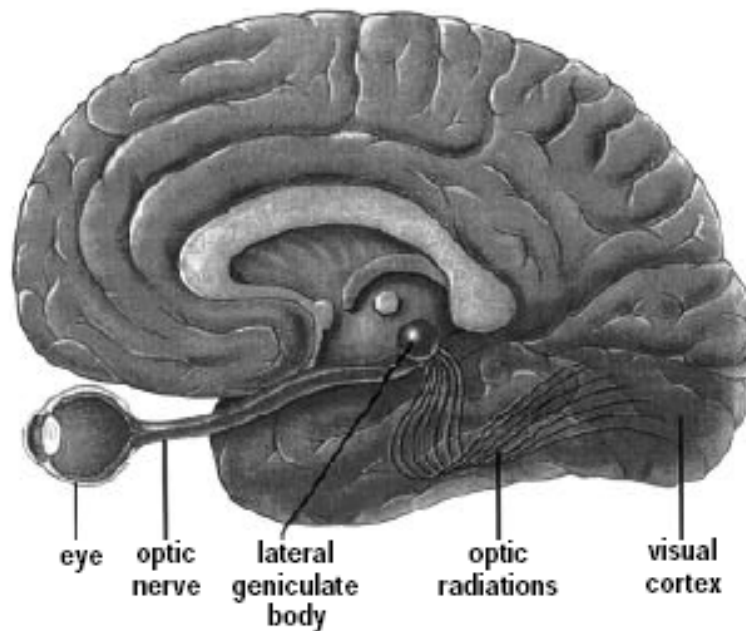


Figure 1.2 illustrates the connection between the eye and the visual cortex. During the critical period after birth, the signals from the eye pass through the lateral geniculate body to the cortex and set the connections among the neurons in the visual cortex for normal vision.

McEwen and Schmeck (1994)⁷

- 66)** The midbrain area works with the brain stem to mediate the state of arousal, appetite control and sleep; and
- 67)** The brain stem is responsible for regulating core functions such as respiration, body temperature, heart rate and blood pressure.

Recognition that much of the critical structure and functioning of the brain is set in early childhood has raised questions about how emotion and patterns of arousal (the response to stimulation or stress) are established. Recent work, based in part on the vision studies, indicates that the cross-connections for the part of the brain that receive the input from the sensing pathways to the other parts of the brain are also under development during early life. Some aspects of brain function may be more malleable during the later stages of life. However, the present evidence indicates that these cross-connections in the brain lose much of their functional plasticity in the later stages of development.

It appears that once the regulatory systems (emotional regulation and arousal in the limbic and midbrain areas) are organized early in life, it may be difficult to modify these systems, while other core brain functions tend to remain more plastic. The brain stem is developed at birth, while parts of the cortex develop later and parts remain plastic throughout life.

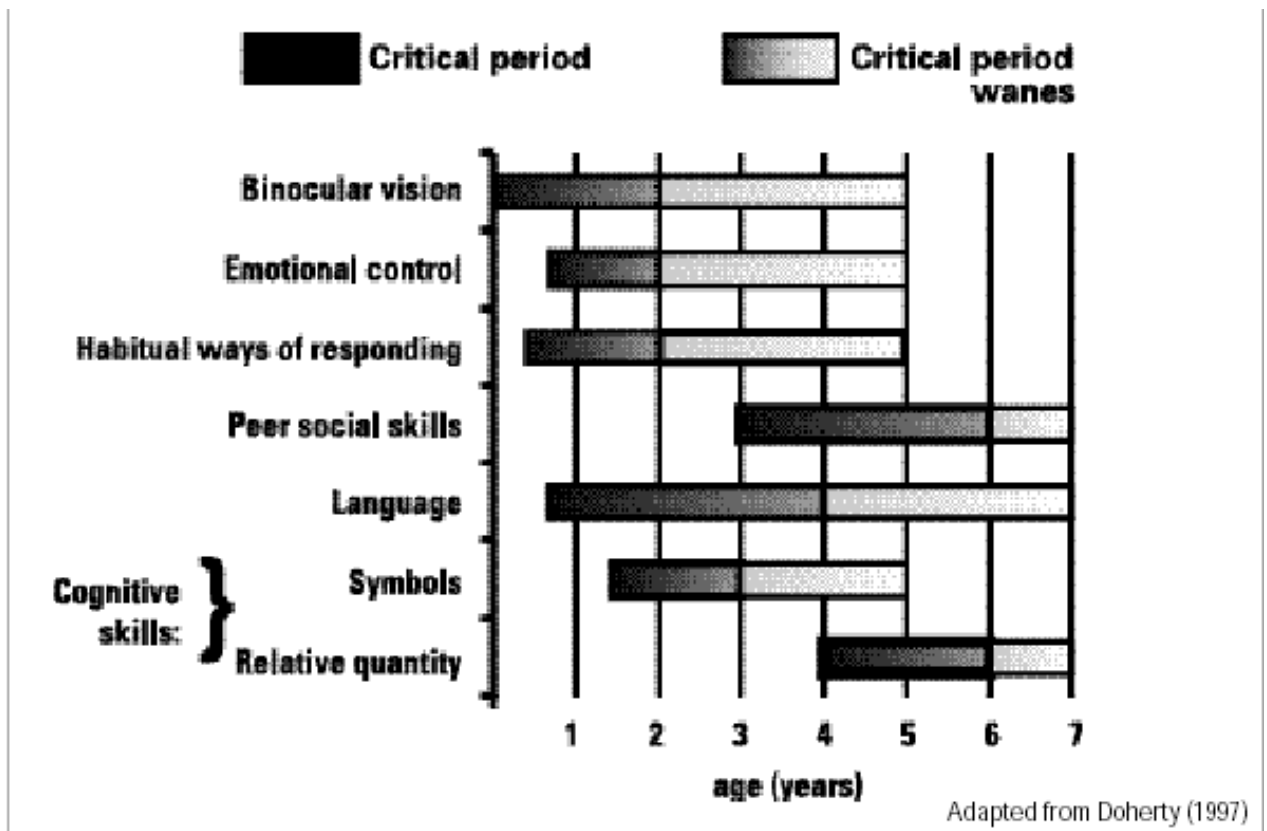
Cynader and Frost conclude that, in addition to vision...

*"... there is no doubt that similar use-dependent selection of particular pathways and neural circuits goes on in other parts of the brain. Examples abound in other sensory pathways including auditory research (hearing) and also in the senses of smell and touch. There is strong evidence for critical periods in the development of higher cognitive functions such as language processing."*¹⁰

Cynader and Frost note, for example, that the best time to learn new languages is relatively early in life. All young children, during the babbling stage, have the ability to make the guttural sound "ch", which is used in several languages, including Japanese, Spanish and German, but not in English. Children who grow up in English-language homes lose the ability to make this sound.

Neuroscience and experimental developmental psychology have come together to better define what appear to be critical periods in early development. Figure 1.2 shows what seem to be critical periods for some components of brain development and function.¹¹ Most of these critical periods for brain development are over or waning by the age of six.

FIGURE 1. 2 - CRITICAL PERIODS FOR SOME ASPECTS OF BRAIN DEVELOPMENT AND FUNCTION



As discussed, the critical periods for the sensing pathway connections with the cortex appear to emerge in synergy with other core functions of the brain, such as emotional control and arousal patterns. The wiring of the brain's pathways appears to be best supported when it can integrate quality sensory input through several pathways at once, particularly during critical periods of development. Positive sensory stimulation through good nurturing helps strengthen brain capacity in other functions such as cognitive development, stable emotions, attachment and normal balanced arousal responses. Inadequate, or what might be called negative sensory stimulation, can lead to the unsatisfactory development of the parts of the brain involved in these functions.

Once the critical periods for brain development have passed, it is possible for some functions, through special measures, to develop the brain's capacity to compensate for poor development in the early period, but it may be difficult to achieve the brain's full potential. If there has been extreme neglect through the critical periods - a child who is rarely touched or talked to or soothed - it may be very difficult to make up for the effects of severe deprivation later on. In the case of vision, once the critical period has passed, it is not possible, at present, to establish normal vision.

THE QUALITY OF EARLY SENSORY STIMULATION INFLUENCES THE BRAIN'S ABILITY TO THINK AND REGULATE BODILY FUNCTIONS

The brain's ability to react to stimuli that are stressful is influenced by how the brain develops in the early years. In turn, the ability to respond to stimuli influences the brain's ability to think and to regulate all bodily functions. This development depends on the quality of the sensory stimulation the brain receives early in life.

Scientists have traced the biological pathways involved in the reaction to stress to provide greater understanding of its impact on adult health and behaviour.⁷ Stimuli that are interpreted as stressful activate the arousal mechanism (the "fight or flight" response that enabled our ancient ancestors to survive), which stimulates the sympathetic nervous system and the hypothalamus-pituitary-adrenal (HPA) pathway that causes an outpouring from the endocrine system. Initially, an individual's response to stress releases chemicals which heighten sensitivity to sensory stimulation and improve memory. But sustained or chronic stress has the opposite effect; it reduces the capacity to process new sensory stimulation, influences behaviour and has a negative impact on memory. Chronic stress can also suppress the immune system.¹²

The quality of sensory stimulation in early life helps shape the brain's endocrine and immune pathways. The relationship between the brain and the endocrine/immune system, set in early life, seems to be a pathway for how competence and coping skills influence learning, behaviour and disease risks in later life. An individual senses and interprets information from the external environment. The response to the external stimulation is in part determined by the brain's control of the endocrine pathway so the brain responds through the autonomic nervous system and the HPA axis endocrine pathways. The brain orders the secretion of the key controlling hormones through the HPA axis. The output of hormones affects all body systems, including the immune system, and influences brain functions that are reflected in behaviour, fear, anger, love and laughter.

Substantial evidence from animal studies shows neglect (such as lack of touch) in the very early stages of life has long-term effects on coping, and this, in association with effects in the development of the HPA axis, makes it difficult for the animals to respond in a balanced manner to stressful events. The effects of factors influencing human development during the early stages of life mostly come from observation. Animal and human studies show that adults who were poorly

nurtured in early life tend to retain sustained levels of stress hormones long after the situation that caused the arousal has gone.

Biological studies show that maternal handling of young animals can set the programs for the HPA axis to respond well to stress throughout the life cycle. Studies also found that the absence of this maternal care produced abnormal stress reactions later in life.

In one study, new born rat pups were gently handled for 15 minutes a day for the first 21 days after birth (this is equivalent to the first two years of a human's life span)¹³. Compared to non-handled rats, the handled rats developed more stress hormone receptor cells which allowed them to control through the feedback pathways, the amount of cortisol (a stress hormone) produced. The rats were therefore better able to regulate their response to stressful events. The changes in these animals were permanent and the handled rats were better able to learn and had fewer age-related cognitive impairments. Other studies have found that rats handled at later points in life do not produce the same changes.¹⁴ A more recent study with rats reported that rat pups who were licked and groomed more often by their mothers during their first 10 days, showed lower cortisol levels in adulthood in response to acute stress than did other rats who were not mothered in the same way.¹⁵

The quality of sensory stimulation received during the early years sets patterns for response to stress, which become embedded in our physiological and neurological systems. Cynader and Frost summarized this aspect of the stress state as follows:

“There is evidence that the stresses to which we are exposed early in life, during a critical period, may modify our ability to moderate and control responses to stressors later in life. There is evidence that rats that are subjected to mild stresses as neonates (for example, being handled repeatedly), show lesser, more controllable responses when tested as adults than do animals that have not been handled as infants. There thus appears to be a critical period for gaining effective neural control over the stress response.”¹⁶

Megan Gunnar studied the relationship between attachment security and reactions to stress in human adults and toddlers.¹⁷ She has found that stressful circumstances such as vaccinations, the presence of strangers, and separation from a parent produce elevations of the stress hormone, cortisol, in infants. In a recent article, she comments that infants and toddlers who have experienced consistent responsive and sensitive care from secure attachments with their parents, tend to develop into socially competent pre-schoolers. Gunnar and her colleagues have found that children, particularly if they are socially competent, have the lowest levels of cortisol in the classroom.

The link that the rat experiments (in the box above) made between the quality of early stimulation to learning is supported by the evidence found by another study done more than 30 years ago.¹⁸ In a controlled laboratory experiment, a group of young rat pups was exposed to an enriched environment which included motor, auditory and visual stimulation from the age of 25 days to

105 days. A control group of rats spent the same amount of time in a typically impoverished environment of a laboratory.

At the end of this period, the brains of the rats were examined. There was clear evidence of denser cortex development (more wiring of the neurons), particularly in the neurons located in the outer layer of the cortex, in the brains of the rats which had experienced the rich environment.

NEGATIVE EXPERIENCES IN THE EARLY YEARS CAN HAVE LONG-LASTING EFFECTS THAT ARE DIFFICULT TO OVERCOME LATER

Wiring and sculpting of the brain begins *in utero*. The fetus responds to external stimuli, including light and sound. Drugs like alcohol, cocaine and tobacco affect the response of the fetus and affect neurological (as well as physical) development. A recent study found the neurological functioning of full-term newborns who were exposed to cocaine during the prenatal period was compromised. Compared with newborns in the unexposed control group, cocaine-exposed newborns had smaller head circumferences, higher rates of interuterine growth delay and neurological abnormalities.¹⁹ Another study found that two-year-old children who were exposed to cocaine and alcohol during the prenatal period had poorer motor development than a control group.²⁰ Studies suggest that exposure to these substances during the prenatal period interferes with the formation of synapses, which has a negative impact on later attention, information processing, learning and memory.²¹

Early brain development is adversely affected by either an absence of stimulation or chaotic, traumatic stimulation. Both types of experiences affect the neural pathways that control the brain's response to what is being sensed. David Hubel, who did the pioneering work on vision and the brain, concluded that:

"Early deprivation of social interaction, such as contacts with a mother, may lead to mental disturbances that have their counterparts in actual structural abnormalities in the brain." ²²

Apparently, deprivation of optimal stimulation or disruptive experiences that lead to an underdevelopment of certain midbrain and limbic areas can result in abnormal behaviour and cognitive abilities.²³ A mismatch can occur between the sensing pathways for learning and the receptive points of a child's brain, particularly for children raised in a troubled environment. Because of the dysfunctional development of the limbic system and midbrain, many of these children spend most of the time in a low level of fear or abnormal arousal that leads to an overreaction to sensory cues. These children are often described by teachers as being learning disabled. To learn, a child needs a state of continued stability and attentiveness. Many of these children will be disruptive and use aggression as a means of problem solving.²⁴

A toddler sits alone in her crib, crying loudly. Her mother is depressed and alone too. She thinks it is better to let the child cry than spoil her by holding and comforting her. Her husband arrives and is abusive about her care of the child and starts shouting at the mother. The toddler's brain senses a highly stressful situation through her visual and auditory sensing pathways. This experience is repeated day after day. The arousal and emotional system of the child's brain becomes wired to be upset and disturbed by these

stimuli. This can lead to an abnormal stress response that can persist throughout life and, among other things, influence mental health.

The illustration (above) conveys how a negative family environment in the early years can affect development. Abnormal development of the sensing systems and neural pathways related to arousal and emotional regulation can lead to difficulties in responding to certain kinds of sensory stimulation or stressful situations. Ongoing or chronic stress reduces the ability to handle arousal stimulation that accompanies new information (necessary for learning) and has a negative impact on a child's ability to cope. The ability to tolerate stress or novel sensory stimulation is influenced by responsive care given in the early years.

Children whose cognitive and behavioural characteristics are poorly developed in their early years have difficulty succeeding in the school system, which can lead to higher levels of antisocial behaviour, delinquency and crime as teenagers and young adults. Studies have found that boys who experienced poor parenting tended to exhibit antisocial behaviour in kindergarten and disruptive behaviour later in school classrooms.²⁵ They were also more likely to drop out of school early. A study that followed boys through adolescence found about 28% of them who demonstrated anti-social behaviour when they entered kindergarten were delinquent by age 13.²⁶

Michael Rutter's recent review of youth antisocial behaviour and criminal activity considered the findings from several longitudinal studies²⁷. He concludes that repeated youth criminal activity often has its roots in disruptive behaviour in the pre-school period.

"Signals indicating the more serious and persistent forms of antisocial behaviour can be detected as early as age three in the form of oppositional and hyperactive behaviour." ²⁸

Tremblay and his colleagues examined the relationships between males' early life experiences, behaviour in the school system and delinquency and violence in the later years.²⁹ They found that most children showed signs of aggressive behaviour at age two, but by age five, their pattern of behaviour was inhibited, presumably, in large part, through good stimulation and the development of the brain functions that inhibit this kind of behaviour. Children who at school entry showed oppositional behaviours, physical aggression and hyperactivity early were more likely to become delinquent as teenagers (violent and non-violent). A school-based intervention initiative (including parent-training and social skills training) had limited impact in reducing adolescent criminal or antisocial behaviour for most of the boys identified as the most disruptive in kindergarten.³⁰

A longitudinal Swedish study found that boys from all socio-economic groups who showed delays in early language development at six, 18 and 24 months, and who had difficulties in understanding and expressing verbal communication at age three and five years, were more likely to be functionally illiterate and to engage in criminal activity by age 17.³¹ The evidence suggests that brain development that is the base for early language abilities is associated with the development and function of other parts of the brain that influence social behaviour and criminal activity.

The relationship of attention deficit-hyperactivity disorder to the antisocial behaviour of early childhood is not clear. Rutter and his colleagues concluded that hyperactivity of inattention has a strong association with antisocial behaviour.²⁷

The trait of hyperactivity appears to have a strong genetic component and antisocial behaviour appears to be largely associated with environmental influences.

There may be a nature-nurture interaction relevant to Tremblay's findings. The Swedish study previously discussed, suggests that reading to a child can stimulate sensitive neural pathways and influence the development of cross-connections that influence arousal and emotions. It is important to appreciate that reading and playing with children in the first 36 months after birth promotes the development of children's verbal ability. This appears to reinforce Tremblay's findings that the aggressive behaviour in most very young children is brought under control by quality early life experiences.

Other studies have found that girls brought up in homes where there is serious chronic discord between the parents, or family disruption, run an increased risk of mental health problems as adults in their thirties. Power and Hertzman found that more than 15% of women from lower socio-economic groups who were part of a major longitudinal study (British birth cohort data) in the United Kingdom had mental health problems in their thirties.³² Maughan and McCarthy found that women from families with significant, frequent conflict during their early years had an increased risk of depression and other mental health programs in adult life.³³ In their reviews, family adversity or discord was also associated with antisocial behaviour. These studies are compatible with what we now know about the quality and kind of sensory stimulation and brain development in the early years, and behaviour and health in later life.

Poor quality child care settings can also create negative effects. These settings appear to not involve parents and do not provide the elements needed for positive early brain and child development. There is a lack of adult responsiveness and quality stimulation, few opportunities for problem-based play, and there may be threats to physical health and safety. The preliminary results from a large American study of early child care suggest that, for vulnerable children, spending time in a low-quality child care program seems to aggravate their problems.³⁴ Gillian Doherty reviewed several American studies on the effect of poor quality settings for young children. The research indicates that full-time attendance in poor quality pre-school child care programs has a negative impact on children's social and language development. In fact, it appears that having a supportive family with adequate resources may not compensate for poor child care experiences outside the home.³⁵

Extreme Neglect

We noted in our discussion of critical periods for brain development that it is usually possible to compensate for poor development in the early years through special measures (although probably not to achieve the brain's full potential), but it may not be possible to compensate for extreme neglect. The Romanian orphanage story provides a compelling illustration of the impact of devastatingly negative experiences in the first years of life. Researchers have found abnormal cortisol levels in children who were living in Romanian orphanages (where children received only minimal custodial care) similar to other children who have experienced traumatic events in early life.³⁶ This evidence is compatible with what we understand about brain development in the early years and the psychoneuroendocrine pathways.^{7, 12}

Developmental delay is consistently reported in observations of children placed early in life in orphanages which did not provide quality care and stimulation.^{37, 38} The longer children are in the

orphanage, the greater the risk of poor brain development during the critical period and the greater the difficulty in helping them overcome their disabilities. The current studies of children adopted by Canadian families from Romanian orphanages have found serious problems in some who were in the orphanages for several years before adoption - an IQ of 85 or lower; atypical insecure attachment patterns; serious behaviour problems; and the continuation of stereotyped behaviour.³⁹

One study contrasted three groups of children:

- i. Canadians living with their parents and who had not been in orphanages;
- ii. Romanian children who had been adopted into Canadian homes before four months of age; and
- iii. Romanian orphanage children adopted into Canadian homes who had been in the orphanage between eight and 53 months.³⁹

The findings were as follows:

68) 22% of the first group (Canadian children who had not been in the orphanages) had one or more problems;

69) 20% of the second group (Romanian children adopted early in life before four months) had one or more problems; and

70) 65% of the third group (Romanian children adopted after eight to 53 months in the orphanages) had one or more problems after adoption.

The longer the children were in the orphanage (some over four years), the greater the seriousness of the problems and the greater the number of problems. Many have multiple developmental problems. It is proving difficult for the parents of the children who were adopted after a considerable period in the orphanage to help them overcome their disabilities and develop the competence and coping skills necessary for a high-quality adult life. The children who were adopted early in life are coming close to the performance of the Canadian children in the study.

Most of the Romanian orphanages were neglectful of the conditions for good early brain and child development. It seems reasonable to assume that most of the children adopted after years of neglect have passed through some of the critical period of brain development without the quality stimulation (nurturing) to build optimal brain structures and function. The congruence of these observations with what we now know about brain development further emphasizes the critical nature of the very early years of child development and brain development. The fact that multiple characteristics are often affected is not surprising in view of what we are beginning to understand about the development of the neural sensing pathways in relation to the complex functions of the brain.

Overcoming the Odds

A concern for everyone is what happens to children who have a less than optimum early childhood. Some will not learn well in school; some will have behaviour problems; some will have health problems; and some resilient ones will do well. How do we help youth who have had a

disadvantaged early childhood? This Report is not directly concerned with these issues, but we do want to emphasize that some overcome the odds and there are a number of innovative programs in our communities that help disadvantaged youth. Many of these programs are designed to minimize the negative impacts of early childhood by helping them control abnormal arousal and emotional responses to stress, and by raising self-esteem so that they can be productive and contributing members of society. These programs often work because they change the environments for these children and avoid stimuli that create an adverse arousal response.

Emmy Werner, who did a study over many years of children born in 1954 on the Island of Kauai, found a small group of children in very difficult family circumstances who seemed to recruit support from substitute parents and grandparents when they were very young.⁴⁰ They developed positive coping skills, competence and well-being that was manifested in adulthood. She also found that appropriate support initiatives in later stages of life can help many overcome problems related to disadvantages in the early years unless neglect or maltreatment in the early years was extreme. Not all could be helped, but one in three children born into impoverished and disadvantaged circumstances became competent young adults.

KEY FACTS ABOUT BRAIN DEVELOPMENT

The brain development that takes place before age one is more rapid and extensive than we previously realized.

Brain development is much more vulnerable to environmental influence than we ever suspected.

The influence of early environment on brain development is long lasting.

The environment affects not only the number of brain cells and number of connections among them, but also the way these connections are "wired".

We have new scientific evidence for the negative impact of early stress on brain function. Carnegie Corporation of New York (1994)⁴¹

GOOD NUTRITION AND NURTURING SUPPORT OPTIMAL EARLY BRAIN DEVELOPMENT AND PHYSICAL DEVELOPMENT AND SET THE BASE OF LEARNING, BEHAVIOUR AND HEALTH THROUGHOUT THE LIFE CYCLE

Optimal brain development is driven by adequate nutrition and the quality of stimulation (nurturing) from the body's sensing pathways. For well nourished children, good nurturing and loving care provide the sensory stimulation that children need for brain development, and help children to develop a secure attachment to, or bonding with their mother, father or other primary caregiver. Good nourishment is important for both the development of the brain and other organ systems. Secure attachment gives children the security and confidence to venture forth into their world to learn and build other relationships. Parents not only provide nutrition and comfort to their babies, but they are the first relationship the child will have. Based on their review of animal and some human studies, Cynader and Frost explain:

"Newborn vertebrates, across a wide range of species, need to form a bond or special attachment to their parents in order to obtain the sustenance, protection, comfort, and guided learning experiences necessary for their physical development and competence"

*as adults. Although it is common to attribute learning as the mechanism which forges these affiliative bonds, through the association of reinforcing characteristics of feeding and comfort with the complex of stimuli that mothers and caregivers present, it is now abundantly clear that special dynamic neural mechanisms exist to facilitate the rapid, timely and permanent construction of these bonds."*⁴²

The effects of nurturing are registered through the sensory pathways (such as touch, sight, sound, taste, smell, temperature, pain, movement or proprioception) where sensory signals drive the development of key neural structures in the cortex of the brain. Incoming sensory signals are picked up by the receptive neurons in the cortex and linked to other core parts of the brain important for functions such as emotion and arousal. Parents and other caregivers, such as grandparents, should provide positive stimulation to young children.

A baby is being breast fed by his mother, cuddled and rocked in her arms as she smiles and coos at him. His brain is busily receiving signals through the sensing pathways, making connections, and laying down neural pathways in response to what he sees and feels. The sensations of warmth, touch, taste, sight, sound and smell are wiring and sculpting the structure of the infant brain, much as an artist creates a graceful figure from a chunk of marble. Through this sensory stimulation, the baby is developing structures and functions of the brain's neural pathways that will influence his sense of security and social relationships throughout life. A sense of security will give the baby confidence, as he learns to crawl and then walk, to explore his expanding world and make friends with other children.

The illustration (above) shows how the stimulation of being breastfed influences the development of the baby's brain and attachment to his mother. In addition to the nutritional benefits for the baby, breastfeeding in the critical early period of brain development appears to have a positive, long-term impact on the organization of the brain's neural pathways. Receiving and integrating multi-sensory stimulation influences the brain's neural pathways in relation to arousal and emotion, which can reduce stress and promote well-being.

A father is reading a storybook to his toddler daughter (18 months old), who is sitting on his lap. His arms are around her, holding up the book with large, colourful pictures. He is reading the words and talking about the animal pictures. He waits for his daughter to point out the animal's nose and eyes. Once more, the sensations of warmth, touch, smell, vision, sound and position are wiring and sculpting the young toddler's brain. The cross-wiring of the sensory stimulation to the different parts of the brain is laying the basis for language and later literacy and other functions of the brain.

This illustration shows the powerful stimulation a young child's brain receives when held and read a simple story. The parent's engagement and responsive conversation create a context for receiving the multi-sensory stimulation accompanying the words and meaning of the story and pictures.

Two young children are playing with a collection of small balls of the same size. One child picks up two balls in one hand and four in another. His brain is receiving multi-sensory information about the objects in his hand. The two balls weigh less than the four balls - he can see and feel the difference. An adult nearby points out that he has two in one hand and four in another. The two children are rolling the balls through different sized tubes. They are trying to get as many balls as possible to drop through the tubes into a bucket below. These children are engaged in problem-solving, play-based learning. They are reacquiring, through the sensing pathways involved, part of the base for the cognitive weight of numbers which influences school-based learning in mathematics.

The importance of problem-solving, play-based learning for early brain development will be discussed further in this report. As the above example illustrates, playing with objects that provide sensory stimulation and allow the child to figure something out, like how many balls go through the tube, supports optimal early brain development.

These examples, together, also help to illustrate the point made at the beginning of this chapter: that the new knowledge celebrates what parents have known and done for a long time. They hold their children close to them, feeding, comforting and loving them, playing and reading with them, and giving them, as they grow, activities that stretch their little minds and bodies. What the new evidence shows is how the brain is being wired by the sensory "inputs" and how incredibly significant early brain development is for the child's learning, behaviour and health throughout life.

The neurosciences, animal studies, observations of people, and tests of interventions with high-risk human populations provide evidence about the best conditions for optimal early brain development.

Healthy Pregnancies and Births

A healthy pregnancy increases the likelihood of full-term, uncomplicated births, normal birthweights and healthy brain development. Healthy mothers are more likely to have healthy pregnancies and deliver healthy babies. There is significant development of the brain when infants are *in utero*. Development is influenced by stimuli received from the mother. The avoidance of smoking, alcohol consumption and other drug use during pregnancy reduces the risk of pre-term births and low birthweights. Public health smoking cessation programs for pregnant women that are effective in reducing smoking reduce the incidence of low birthweight.⁴³

Research on nutrition and social support initiatives suggests that multi-component programs can be effective in reducing low birthweight and pre-term births when they are offered to all pregnant women on a universal basis.⁴⁴ Prenatal medical care by itself appears to have a limited impact on reducing further the numbers of low birthweight and pre-term births.⁴⁵

However, there is strong evidence that a mother's nutrition has a significant influence on her child's later health.⁴⁶ Small size and thinness at birth are associated with coronary heart disease, hypertension, and diabetes in later life. Since the two principal determinants of a baby's weight at birth are the mother's pre-pregnancy weight and her own birthweight, strategies to improve the health of future mothers are important.

Breastfeeding

The act of feeding a human infant provides nutrients and stimulates sensory pathways. The weight of the evidence indicates that breastfeeding provides both optimal nutrition and stimulation for newborn babies and young infants.⁴⁷ Human breast milk contains the optimal balance of nutrients needed for brain and body growth. The act of breastfeeding provides frequent opportunities for skin-to-skin touch and smell stimulation. The American Academy of Paediatrics recommends that mothers breastfeed their infants for a minimum of one year.⁴⁸ Where breastfeeding is not an option (because of adoption or mother's illness, for example), feeding practices can follow breastfeeding practices, by holding and cuddling the baby while feeding. A study that looked at the differences between formula-fed and breastfed children at 18 months found that the breastfed babies did better on mental development tests, even after adjusting for social and demographic influences.⁴⁹

Another study considered the impact of enriched formula supplements for pre-term babies.⁵⁰ At age seven to eight years, the boys who received enriched formula had significantly better verbal skills than those who received the standard formula only. However the enriched supplement made little difference to those children (boys and girls) who received their mothers' breast milk. The mother's employment status and the available social supports both influence the duration of breastfeeding.⁵¹

Nourishment and Stimulation

A randomized controlled trial in Jamaica showed the importance of both stimulation and good nutrition after birth.⁵² A group of infants who were high risk (stunted growth) were randomly allocated to four groups. The food supplement consisted of one kilogram of milk-based formula each week. The stimulation intervention involved weekly play sessions with mothers at home guided by a community health aide. Mothers were encouraged to play with their children and home-made toys were left in the home at the end of each visit. One group received an intervention that provided stimulation and another nutritional supplements; a third received both; and a fourth received no intervention. Their development was compared to a control group of low-risk children who received good nurturing and nourishment. The study found that children who were given either stimulation or good nutrition for two years, approached 50% of the development of low-risk children during the two years. The children who received neither stimulation nor good nourishment developed poorly and may have been permanently handicapped. The children given both good nutrition and stimulation reached the same stage of development as the control group of children.

Another series of studies with premature infants suggests the powerful synergy of enriched sensory stimulation and high quality nourishment in promoting optimal development. Touch is a key stimulus for brain development in the early stages of life. One set of observations that brings out the importance of touch in early development is the beneficial effect of touch in combination with breastfeeding for premature infants.⁵³

A technique, which originated in Bogota, Columbia, is referred to as "kangaroo mother care" (because the kangaroo mother keeps its infant in a pouch). The human baby is positioned on the mother's chest in an upright position with direct skin-to-skin contact and breastfeeding is the prime source of nutrition. Apparently, infants cared for in this manner do better in their development than premature children who are kept isolated in incubators. The results suggest the improved infant outcomes are connected to both the increased stimulation and increased maternal responsiveness.

Early Years and Health Risks in Adult Life

One of the important new understandings is the relationship between the conditions of early childhood and later health. Part of the evidence for this is historical and is discussed in the next chapter. The recent British report, *Inequalities in Health*, concluded:

*" While remediable risk factors affecting health occur throughout the life course, childhood is a critical and vulnerable stage where poor socio-economic circumstances have lasting effects. Follow up through life of successive samples of births has pointed to the crucial influence of early life on subsequent mental and physical health and development. The fact that adverse outcomes, for example, mental illness, short stature, obesity, delinquency and unemployment, cover a wide range, carries an important message. It suggests that policies which reduce such early adverse influences may result in multiple benefits, not only throughout the life course of that child but to the next generation."*⁵⁴

We now know that the risk for many chronic diseases are set, at least in part, in early life. This has become very clear for mental health problems such as depression in adult life.³²

It is clear that the development during the very early years (including *in utero*) affects risks for high blood pressure and non-insulin dependent diabetes.⁵⁵ There may also be an effect on vascular diseases such as coronary heart disease.^{56, 12}

The brain, as McEwen and Schmeck argue, is the organ that controls the body.⁷ The brain influences health risks through such biological pathways as psychoneuroendocrinology and psychoneuroimmunology. The increased interest in the social determinants of health will, when merged with our new understanding of biological pathways, be a new frontier in health research. It could show how brain development and function can influence health risks throughout the life cycle. Chris Power and Clyde Hertzman have reviewed the evidence concerning health risks in the early years and over the life cycle.⁵⁷

INITIATIVES THAT IMPROVE EARLY CHILD DEVELOPMENT

There are well-designed child development studies and longitudinal surveys that show that quality early child development programs that involve parents benefit the children and, in many cases, their families as well. "Early child development", as we use the term, can be provided in different settings - such as day care or child care centres, home-based child care programs, pre-school programs such as junior and senior kindergarten. It is not the setting that defines early child development; it is the activities. In our view, activities must focus on parent interaction with their children and play-based problem solving with other children that stimulate early brain development through the sensing pathways.

Most of the studies described below examined early child development programs that include both parent involvement and play-based problem solving with an early childhood educator.

The parenting involvement is more than an occasional visit to see how the child is doing at the pre-school program. In the early years parents spend more time with their children than any other adult. The early child development programs that involve parents will help them be better early educators.

There is often an element of parent training and education, and active parent participation in children's play-based learning; there may be home visiting as well. Parenting support initiatives can reduce parental stress and improve outcomes for parents. People who are reared in poor early parenting circumstances are more likely to be poor parents and repeat the cycle. They are not all poor parents, by any means, but those who are poorly nurtured themselves have a harder time learning parenting skills without any models from their own childhood. Parenting support can help fill the gap.

The Carolina Abecedarian Project

The Carolina Abecedarian Project was designed to examine the effect of early child education and parent support on child development among families who were classified as disadvantaged on socio-economic criteria.⁵⁸ The program was begun just weeks after the child's birth. The children were randomly assigned either to the intervention group or to a control group. At school entry, all the children were assigned to either a school-age intervention program that ran until age eight or to a control group. The pre-school early child development program was a full-day, year-round, centre-based intervention with an infant/toddler (zero to three years)-to-teacher ratio of three to one and a child (three to six years)-to-teacher ratio of six to one. The parents were involved and engaged and asked to provide supplemental educational activities at home. Home visits were made about 15 times a year.

At the end of the pre-school program, the intervention group significantly outperformed the non-intervention group, in terms of the IQ measurements. All children who had the pre-school program had better scores on reading and mathematics at age 15. The support given to children from the non-intervention group (no pre-school program) when they entered the school system had little effect.

The mothers in the intervention program became better educated and were less likely to be unemployed. This study shows the value of quality early child development and parenting involvement for both mothers and children.

It is very much in agreement with what we now understand about the quality of stimulation in the very early years and brain development.

In a subsequent study, the effects of early child development programs and home visiting programs were examined. The group of children who received only home visiting was similar to the non-intervention group in terms of cognitive development.⁵⁹

Ypsilanti/High Scope

The Ypsilanti/High Scope Study has demonstrated that a very high quality intervention program, with parent participation, can drastically change outcomes even if the program starts at age three.⁶⁰ The Ypsilanti/High Scope program for high-risk Michigan children between the ages of three and six was a sophisticated program with a quality curriculum, extensive staff training, and parental involvement. The two-and-a-half hour, five days a week, centre-based program for 30 weeks each year, was supplemented by 90-minute weekly teacher home visits. This program had a series of long-term effects, including: reducing the risk of dropping out of high school, reducing the incidence of drug use; reducing the incidence of teenage pregnancy; and enhancing employment and reducing reliance on welfare.

By age 27, the competence of the adults who had been in the program as children showed distinct differences from the non-intervention group. The burden of mental health problems in women was substantially less than women who were not in the program. The males from the program had considerably fewer arrests than those who were not in the program. The increased participation in the labour force and the avoidance of costs, such as expenditures on welfare and the justice system, has been estimated to provide a seven dollar gain for every dollar spent on the program. In view of today's evidence, if the child development program had been started earlier (before age three), the outcomes would likely have been better.

An extensive review of crime prevention initiatives found that, by the time children are in the school system, interventions are much less effective than programs that are begun in the pre-school period.⁶¹ This conclusion is compatible with the Ypsilanti study, which is compatible with what we know about early brain development. The results from the High Scope Study indicated that the enriched adult instruction and parental involvement between three and six years diminished the negative behaviour outcomes in later life.

Ypsilanti did not have long-term effects on IQ (the initial improvement faded out later in the school system). But it started at age three, and we now know that a great deal of brain development takes place in the first three years. The Carolina Abecedarian project, which started much earlier, found early intervention can improve IQ scores. The improved outcomes still held when the children in the study were tested at age 12. This early child development initiative started as early as six weeks, and the average age was about four months. The program was specifically designed to enhance cognitive, language, perceptual, motor and social development. As much as possible, parents were involved.

U.K. Child Health and Education Study

In the United Kingdom, a large longitudinal study, the Child Health and Education Study, examined effects of half-day pre-school, child care and play groups on children's academic achievement and cognitive development.⁶² They reported that children who attended any form of organized group pre-school program when they were three and four years old showed improved cognitive development and academic achievement compared to children who did not. Disadvantaged children gained slightly more than advantaged children. The study concludes that:

*"the overall differences in the children's mean scores according to their pre-school experience were large relative to the effects of other social and family factors."*⁶³

The U.K study supports the practice of parent involvement in early child development settings. Children tended to do better when parents (usually mothers) participated in their own child's program, compared to children attending programs whose parents did not participate and to those children who did not attend any program. They had better vocabulary at ages five and 10, were better at reading and mathematics at age 10, and had better interpersonal communication skills. These findings were independent of the child's socio-economic status and the type of pre-school setting. Children in all socio-economic groups benefited from participation in pre-school programs.

Swedish Longitudinal Study

A study in Sweden followed a sample of 128 children born in 1975 from their first year of life.⁶⁴ The sample was drawn from families living in low- and middle-income urban households. About 33% of the children attended a child care setting (either a high quality child care centre or licensed family day care home) outside the home during their first year of life. By age four, about 70% of the children were enrolled in a child care centre or licensed family day care home. The children's social skills and cognitive abilities were assessed at age eight and age 13. The study found that school performance was highest among those children who attended the early child development programs before age one. This group of children was more independent, less anxious, and more confident than children who were placed in child care at a later age or who did not go to a child care setting.

At the time of the study, Swedish parents received six months parental leave at full pay, so these children would have entered child care settings between six months and one year. Swedish parents are also entitled to reduce their work hours, so for most young children full-time attendance in a child care program would be for fewer than eight hours a day. This finding is also compatible with the evidence that good nurturing in the very early period substantially improves brain development with subsequent effects on behaviour and learning.

Head Start

Head Start is a broader-based American early intervention program which set out to improve opportunities for early childhood in disadvantaged families. The program combines diverse initiatives and has been difficult to assess. There seem to have been gains for white children in terms of their scores in school and school attainment. There were initial gains for African-American children at a younger age, but the effects were lost as the children became older, possibly because of the school system.⁶⁵ The weight of the evidence supports the conclusion that good pre-school programs that involve parents improve children's outcomes.⁶⁶ The problem in the U.S. studies may be that doing this in an integrated manner is more difficult than in the Scandinavian countries and they did not start early enough.

Rightstart

Robbie Case (from Stanford University and the University of Toronto) and his colleagues⁶⁷ have developed an early math enrichment program, called Rightstart, for preschool children. It is designed to build understanding of the basic cognitive weight of numbers (or a number concept). In Rightstart, children manipulate materials on their own, but adults are encouraged to ask children specific questions which reinforce mathematical concepts. There is an emphasis on simple board games in which the object is usually to progress along a number line towards a particular goal, using dice and counting markers. In the process of the game, adults ask questions about who is closer to the goal and how many markers will be needed to reach the goal. The games engage children and are examples of problem-solving, play-based learning.

In one study, a group of four-year-old children from a low-income neighbourhood in Massachusetts were randomized into two groups. At the end of the study (two years), the children randomized to the Rightstart program had a better understanding of numbers than children from the same low-income neighbourhood who had not participated in the program. What is even more interesting is

that later testing of these children found those who had participated in Rightstart did better in mathematics in school at age nine than a control group of middleclass children.⁶⁷

Robbie Case and Michael Mueller recently summarized the evidence concerning the early years development and mathematical skills:

“Studies of early mathematics achievement have consistently shown large differences across socio-economic groups.⁶⁸ Although these results are sometimes attributed to the differential effectiveness of schooling for different SES [socio-economic status] groups, our own data suggest that this cannot be the entire story, since very large differences in numerical competence already exist, before children ever enter the school system. In one study that we conducted, for example, we found differences of one to two years between very high and very low SES children in the age at which they first solved Dehaene’s task, [a simple task indicating understanding of number] and all the other tasks with which it is associated. High SES groups often pass these tasks by four to five years of age, while low SES groups often did not pass them until six years of age or older.⁶⁹ Although some might prefer a genetic explanation for these results, our own interpretation is that these differences must be experientially produced, since the size of these differences vary from one country to the next as a function of social policy, even when the diversity of the populations are controlled for.”⁷⁰

Écoles Maternelle in France

Studies of the French Écoles Maternelle have found that participation in early preschool programs has an impact on later school achievement across all socio-economic groups. The longer children attend the pre-school programs (which begin at two-and-a-half years), the better their school achievement in the first grade. The écoles maternelle are public nursery school programs operated within the education system. Most children from two-and-a-half or three years attend the full-day (8:30 am to 4:30 pm) programs. The teachers have the equivalent of a master’s degree in early education. The programs promote a range of creative expression, language and physical activities.⁷¹

In 1980, the French Ministry of Education conducted a large-scale survey of 20,000 students to assess the impact of pre-school attendance on grade one performance. They found that every year of pre-school attendance reduced the likelihood of children being held back (called the retention rate) to repeat grade one.⁷² Each year of pre-school narrowed the retention rate in grade one for children from affluent and low-income families. The results from this study indicate that early child development programs benefit children across the socio-economic spectrum.

Independent Inquiry into Inequalities in Health

The Independent Inquiry into Inequalities in Health,⁷³ chaired by Sir Donald Acheson, assessed the value of pre-school programs in the United States through a review of randomized controlled trials of non-parental, out-of-home day care before the age of five.⁷⁴ The studies included Ypsilanti and Carolina Abecedarian project (discussed above). In total, 2,000 children were involved in the studies; most initiatives targeted families of lower socio-economic status; nearly all included an element of home visiting and parental training; and the formal educational component varied. In

keeping with our assessment, the Acheson committee concluded that educational performance of the children tended to be persistently higher in the groups that received early education in a day care setting. They also noted that some studies improved the educational, employment and financial achievement of the mothers whose children attended day care.

Home Visiting

Home visits do not have the same base for supporting child development that early child development centres have. Researchers have studied the role of home visits to help infants and their mothers through parent education, social supports for the mother, and referrals to social and other services. These initiatives begin as early as during the pregnancy and usually continue for the first two years after the child is born. One study, conducted in Elmira, New York, showed that home visits by trained nurses to support high-risk families reduced the incidence of child maltreatment by parents.⁷⁵ It also reduced visits to hospital emergency departments. There were benefits, particularly to the highest risk mothers through both increased employment and reduced frequency of subsequent pregnancies. However, there were no improvements in children's IQ at age four. A recent analysis of the 15-year follow-up trial found that children born to low-income, single mothers who had received the nurse home visits may have had some positive effect in reducing serious criminal antisocial behaviours.⁷⁶ However, there were no effects on other behavioural problems. Unfortunately, there were no other outcome measures of children's development and performance. Home visiting does not appear to have a large effect on early child development unless it is coupled to early child development programs.

Primate Studies

Stephen Suomi and his colleagues have conducted extensive research with rhesus macaques.⁷⁷ He studied the impact of rearing environments on the behaviour and development of these monkeys. His results indicate that temperament may be largely the result of a young monkey's home life. He has found that genetic tendencies can be dramatically modified by early experiences. Early relationships with mothers or other caregivers seem to be particularly powerful in affecting lifelong behaviour and physiological patterns.

In one series of studies, a group of monkeys selectively bred to be either unusually highly reactive or within the normal range of reactivity were raised by female adult monkeys who were not their biological mothers. The adult females had previous offspring and had demonstrated either highly nurturing care or normal maternal care (the controls). The mothers took care of their "adopted" offspring for six months before joining the larger troop. The infants with normal reactive profiles showed no marked differences in their behaviours whether their foster mother was highly nurturing or not. The highly reactive infant monkeys reared by the normally nurturing mothers demonstrated the expected hesitancy to explore and exaggerated responses to minor stresses. But the highly reactive infants reared by the exceptionally nurturing foster mothers explored their environment more, coped better with stress, and showed less upset about weaning than the other groups (the highly reactive young monkeys or the normal reactive ones).

Suomi also found that poorly nurtured, highly reactive female monkeys tend to poorly nurture their offspring, setting up an intergenerational cycle of poor outcomes. Placing the poorly nurtured mothers and offspring with a nurturing mother led to normal development of the offspring and helped the mother. In these experiments, there is both continuing support for the offspring and the

poorly nurtured mother, a kind of combination of parenting and early child development on a one-to-one basis.

WHO NEEDS EARLY CHILD DEVELOPMENT AND PARENTING SUPPORT ?

A key conclusion of the Early Years Study is that families - children and parents - from all socio-economic groups in our society need support if Ontario is to improve children's outcomes in learning, behaviour and health over the life cycle. The evidence from neuroscience and child development studies is clear: the first years of life are crucial in setting a good foundation for each child's future. A great deal has also been learned from studies that tell us about the environments and experiences that support good early child development and the programs that improve outcomes for children.

But who needs support? Aren't most Ontario children and families doing pretty well now?

The answer is discussed in more detail in the two chapters that follow. In Chapter 2, we discuss the broad socioeconomic context that is affecting families in Ontario and Canada today. In Chapter 3, we review findings on child outcomes and review what has been learned about the importance of parenting and socio-economic status. Overall, we make the case that a significant number of Ontario families with young children would benefit from early child development and parenting support, and that those families come from all rungs of the socio-economic ladder.

CONCLUSION

- ◆ New knowledge has changed our understanding of brain development and complements what has been learned about the early years from developmental psychology. We know now that early experiences and stimulating, positive interactions with adults and other children are far more important for brain development than previously realized.
- ◆ It is clear that the early years from conception to age six have the most important influence of any time in the life cycle on brain development and subsequent learning, behaviour and health. The effects of early experience, particularly during the first three years, on the wiring and sculpting of the brain's billions of neurons, last a lifetime.
- ◆ A young child's brain develops through stimulation of the sensing pathways (e.g. seeing, hearing, touching, smelling, tasting) from early experiences. A mother breastfeeding her baby or a father reading to a toddler on his lap are both providing essential experiences for brain development. This early nurturing during critical periods of brain development not only affects the parts of the brain that control vision and other senses, it influences the neural cross-connections to other parts of the brain that influence arousal, emotional regulation and behaviour. A child who misses positive stimulation or is subject to chronic stress in the first years of life may have difficulty overcoming a bad early start.
- ◆ Given that the brain's development is a seamless continuum, initiatives for early child development and learning should also be a continuum. Learning in the early years must be based on quality, developmentally-attuned interactions with primary caregivers and opportunities for play-based problem solving with other children that stimulate brain development.

-
- ◆ The evidence is clear that good early child development programs that involve parents or other primary caregivers of young children can influence how they relate to and care for children in the home and can vastly improve outcomes for children's behaviour, learning and health in later life. The earlier in a child's life these programs begin, the better. These programs can benefit children and families from all socio-economic groups in society.
 - ◆ This period of life is as important for an educated, competent population as any other period. Given its importance, society must give at least the same amount of attention to this period of development as it does to the school and post-secondary education periods of human development.

CHAPTER 2

SOCIOECONOMIC CHANGE AND FAMILIES AND CHILDREN

In contrast to the 30 years following the Second World War, today's families are living in a society that is more complex and less stable than in the post-war period. We are all affected by this profound socio-economic change.

In this chapter, we review:

1. How economies create and distribute wealth affects early childhood, and early child development affects the health and competence of populations throughout the life cycle. Young families with children are among those most strongly affected by the major socio-economic change.
2. Some of the effects of major technological change and globalization of world economies. The challenge is to facilitate the building of the new economy; help individuals who are caught in the change to adapt; and sustain cohesive, high-quality social environments.
3. Why the early years of child development must be a priority for investments by societies and governments coping with these changes. The choices for society are clear; the political choices are difficult.
4. How policies and institutions must change to adapt to the reality of women's labour force participation, the changing structures of families, and the stresses on families with young children.

THE INTERACTION OF ECONOMIC CHANGE, HEALTH AND WELL-BEING, AND EARLY CHILD DEVELOPMENT

The great improvement in the health and well-being of citizens of the Western world since the Industrial Revolution is one of the most remarkable changes in human history. Over the long term, the Industrial Revolution affected health and well-being through improved prosperity and better nutrition of the population. Although there is debate about the size of this effect versus the effects of medicine and public health, Thomas McKeown concluded that 75% of the decrease in mortality in the United Kingdom after 1840 was due to better nutrition and made possible, in part, by the improved prosperity of the population.⁷⁸

Robert Fogel, a prize-winning economic historian at the University of Chicago, in a more detailed historical analysis of the decline in mortality in Western countries following the Industrial Revolution, came to a similar conclusion.⁷⁹ He observed that the increase in life expectancy coincided with an increase in average height of the population. Fogel concluded that improved nutrition (as measured by height) of children was an important factor and that the risks for many of the chronic diseases of adult life are set in early childhood.

This conclusion from the historical evidence has been reinforced by the results of epidemiological and biological studies on today's population. This recent report in the United Kingdom on factors contributing to inequalities in health concluded:

While remediable risk factors affecting health occur throughout the life cycle, childhood is a critical and vulnerable stage where poor socio-economic circumstances have lasting effects. Follow-up through life of successive samples of births has pointed to the crucial influence of early life on subsequent mental and physical health and development.”⁸⁰

How economies create and distribute wealth affects social structures for parents and early childhood, which in turn affects the health and competence of the population throughout the life cycle. Both Sen⁸¹ and Dasgupta⁸² (economists at Cambridge University) have pointed out that the health of a population influences the strength of its economy and that the equity of the health status of a population is a measure of how well the economy is working.

Fogel in his historical analysis calculated that the improvement in the quality of the British population as manifested by decreasing mortality rates following the Industrial Revolution accounted for about 50% of the economic growth since 1790.⁷⁹ Economic and social policies that do not take into account the delicate balance between economic growth and the social environment and human development can trap a society into increasing inequity and a decreased standard of living. There is growing recognition that South America will not thrive economically until the crime and violence in its cities are reduced, and it will not be able to meet this challenge without tackling the issue of early child development. Thus, early child development has become a focus of both the Inter-American Development Bank (Latin America) and the World Bank in terms of the economic growth of developing countries.

In his 1993 Nobel Prize lecture, Fogel was critical of the widespread inability of economic theorists to better appreciate the relationship between the economy and the quality of the population as seen from an historical perspective:

At the outset of this lecture I stressed the need for economists to take account of long-run dynamic processes through a study of history. Uncovering what actually happened in the past requires an enormous investment in time and effort. Fortunately for theorists, that burden is borne primarily by economic historians. Theorists only need to spend the time necessary to comprehend what the historians have discovered. A superficial knowledge of the work of economic historians is at least as dangerous as a superficial knowledge of theory.”⁸³

It is key for economists influencing public policy to take up Fogel's challenge. Consideration of policies for the early years by governments cannot be done without considering the social and economic implications for a society. We know that in periods of major economic change, there are effects on all sectors of society. The most vulnerable groups, which usually include mothers and children, can be negatively affected more than other sectors of society.

Next, we examine some of the evidence about the present period of technological and economic change and why mothers and children should be a high priority.

THE CHALLENGE OF COPING WITH MAJOR TECHNOLOGICAL CHANGE AND GLOBALIZATION OF WORLD ECONOMIES

Major technological changes that affect the wealth-creating capacity of societies are driven by what economists concerned with technology and economic growth now refer to as "general purpose

technologies".^{84A} Examples of some of these technologies are steam power and electricity. Each of these general purpose technologies (GPT) replaced an old technology with a new one and transformed the basic mode of operation and production in a number of sectors. These kinds of new technologies have wide-ranging effects on societies. Economists may debate the significance of major technological change on the determinants of economic health, but the historical consensus is that these changes have profound effects on people and on institutions in the private and public sectors. The changes caused by a general purpose technology are much more complex than the changes associated with the more frequent business cycles in the economy.

Today, we are in the midst of a technological revolution driven by the capability of computer systems to replace human brain power with low-level artificial intelligence - what can be called the "chips for neurons" revolution. This new general purpose technology makes it possible to replace human beings with electronic technology across all sectors of work. We see the effect today across industrial, financial, education, government and transportation sectors. Robots assemble auto parts; banking is conducted through the Internet or ATM machines; and artificial intelligence, rather than pilots, guides commercial jets through the air and on and off the runway. The application of new general purpose technologies in electronics and biotechnology is fundamentally shifting the base of our economy with significant effects on social and work environments.

One measure of how well a society is coping with a new general purpose technology is called Total Factor Productivity (TFP). TFP measures an economy's efficiency. It can be considered a proxy for measuring innovation in an economy. With the arrival of a new general purpose technology, TFP growth can slow down. Without growth in the TFP it is not as easy to increase the wealth of a society and to improve the income of citizens. But if it is properly exploited, the new general purpose technology should eventually lead to increased TFP growth and a corresponding rise in standards of living (including increases in salary levels).

TFP growth has been flat in many developed countries - including Canada - since the mid-1970s and it is projected by the Organization for Economic Co-operation and Development (OECD) to be fairly flat for Canada for the foreseeable future.^{84B, 85} With the incorporation of new general purpose technology into an economy, this slowdown is to be expected, but the problem for Canada is that its TFP growth could lag behind that found in other countries. Our failure to achieve a higher level of TFP through the successful application of the new technology and restructuring of the economy, by international standards, has been associated with a poor growth in the relative economic position of the young and the least skilled and educated members of the population. Presumably we will regain our TFP growth with increased prosperity when we have been able to take advantage of the new general purpose technology. This may take several decades.

Developed societies in this century have put in place "social safety nets" to buffer the effects of business cycles on families and individuals. But sustaining social safety nets to buffer the societal effects associated with major technological and economic changes resulting from a GPT is more difficult.

The "freeing up" of societies (through deregulation and privatization) to respond to the force of these changes, as well as the constraints on government resources and programs, particularly transfer payments, can all create difficulties for individuals. Social safety net programs designed for business cycles assumed that unemployment was temporary and short-term and that workers would return to their same industry and perhaps even the same employer once the economy moved into another growth cycle. The economic revolution we are now experiencing eliminates jobs,

companies, and even industries, so that individuals who are displaced require new skills and new careers to become part of the new businesses. They are unlikely to return to their old jobs or even their old industry. Rather than temporary unemployment insurance or social welfare, these people (men and women in all age groups) need access to training and other forms of labour market assistance as we try to build the new economy.

Just as in previous times of technological change, societies face the challenge of:

- 71) Balancing policies that facilitate the building of the new economy;
- 72) Helping individuals who are caught in the change to adjust; and
- 73) Sustaining cohesive, high quality social environments.

Dahrendorf, the former head of the London School of Economics, has recently described the challenge facing industrialized countries.

*"The overriding task of the first world in the decade ahead is to maximize - to the extent possible - wealth creation, social cohesion, and political freedom, realising that the promotion of any one of these goals may only be achieved at the expense of others."*⁸⁶

The role of government in this change is clear to Dahrendorf.

*"At the very least governments set the tone for the economy and for society now generally. The government should also set the tone for the overall quality of the population."*⁸⁶

The choices for society are clear; the political choices are difficult

It is now clear how well society is coping with the forces of technological change in Canada and Ontario. Growth in real annual wages has stagnated for most of the period since 1975. Structural unemployment has grown. The institutional, economic and social characteristics of communities and governments are being transformed. These changes affect the circumstances and interests of all groups in society. All these pressures of adjustment have major effects on the young and families with children.

Some of the documented economic effects on the child-rearing population are:

- 74) Real annual wages of men under age 45 have been declining since 1975, and there has been a substantial increase in dual-earner families over this time;⁸⁷
- 75) The population under 30 years of age has experienced a chronically high unemployment rate⁸⁷ (This may now be decreasing);
- 76) Government transfer payments that have helped sustain individual income since 1975 are now curtailed;

77) Families with the youngest children have the fewest monetary resources - 37 % of all families in Ontario with children under six years have a total pre-tax income of less than \$40,000. By comparison, 27% of all families with children six to 16 years have incomes less than \$40,000.⁸⁸

In 1972, the bottom half of families with children aged zero to 14, as defined by median income, got about 70% of their income through work and about 30% through transfer payments. In 1992, this portion of the population received more than 60% of their income through transfer payments and 40% from work.⁸⁹ The buffering effect of transfer payments has, in part, prevented the growth in income inequality (at least until 1996) such as that experienced in the United States.

In a detailed study of the incidence of low-income families with children from the 1980s to 1991, Picot and Myles concluded that despite the fact that there had been a downward trend in the average earnings of young adults under age 35 there was no corresponding rise in children in low income families if one took into account the ups and downs of business cycles. They concluded that social transfer payments offset the decline in earnings from work during this period.

But there have been reductions in government transfer payments since 1991, the last year of the first Picot and Myles study. A recent study shows that in the period 1993-96 there was no increase in the proportion of Canadian families living below the Statistics Canada's Low Income Cutoff.⁹⁰ The Low Income Cut-off (LICO) is the income level below which families are spending significantly more on essentials (60%) than the average Canadian family (40%).

Between 1993 and 1996, there was an increase in what is called the LICO "gap" for children (this measure is the position of the average low-income child below the LICO) from 31.2% to 34.9%. That is, the average family income for families with incomes below LICO was 31.2% below the cut-off point in 1993 and grew to 34.9% below the cut-off point in 1996.

However, examination of the data for Canada and Ontario shows that, since 1975, there has been a steady increase in families with incomes below the LICO, although there has been no clear increase between 1993 and 1996. The LICO-IAT (income after tax) shows a similar rate of increase since 1980. This measure does show an increase for the 1993 to 1996 period.

TABLE TABLE 2.1 PERCENTAGE OF THE POPULATION BELOW THE LOW INCOME CUTOFF (LICO) OR THE LOW INCOME CUTOFF AFTER TAX (LICO-IAT) 1975-1996

CANADA											
%	1975	1980	1986	1988	1990	1991	1992	1993	1994	1995	1996
LICO %	11.84	15.5	17.5	16.2	17.8	18.8	19.0	21.2	19.3	21.0	21.1
LICO-IAT %		11.9	13.6	12.6	13.3	14.5	14.2	13.8	14.8	16.5	19.2

ONTARIO							
%	1975/76	1980/81	1988/89	1990/91	1992/93	1993/94	1995/96
LICO %	11.53	13.7	11.9	16.1	18.3	19.3	19.8
LICO-IAT %		10.5	9.5	12.1	13.1	13.8	16.0

Statistics Canada (1995 & in press)

Table 2.1 compares both the LICO and LICOIAT for families with young children from 1975 to 1996.^{89, 90} In doing these comparisons, it is important to appreciate the influence of the business cycles. Thus for Ontario, if we compare 1980/81 to 1995/96, the numbers of children below the LICO have increased from 13.7% to 19.8% and the LICO-IAT from 10.5% to 16.0%. Over the period from 1975 to 1996 the changes are compatible with the effects of a new general purpose technology on an economy and its people.

Reductions in the social safety net may be increasing the number of families with incomes below the low-income cut-off. In the case of two-parent families, the increase in the percentage below the LICO is largely due to Employment Insurance (EI) cuts; in the case of lone-parent families, it is mainly a consequence of social assistance cuts.

Since young children are among the most vulnerable groups during this period of socio-economic change, trends in child health, development and well-being are of interest. Unfortunately the data we could find for the period since 1975 were limited to infant mortality and child abuse. The data for Ontario for the period from 1975 to 1995 are shown in Table 2.2. The infant mortality rate declined steadily until 1990 and has remained relatively flat since then. In contrast, the reported incidence of child abuse has increased. Reported incidents of child abuse show further increases since 1995. The child abuse data are in keeping with the increasing caseloads reported to be occurring by the Children's Aid Societies and the provincial government.⁹²

TABLE 2.2 SOCIAL WELL-BEING INDICATORS IN ONTARIO 1975-1995⁹¹

	Infant Mortality*	Incidence of Reported Child Abuse **
1975	13.41	.0432%
1980	9.53	.0453%
1985	7.27	.0419%
1990	6.27	.0516%
1991	6.29	.0552%
1992	5.88	.0509%
1993	6.24	.0535%
1994	6.24	.0533%
1995	6.24	.0528%

* Infant mortality rate is the number of deaths of children less than one year per 1,000 live births.

** Percentage of children injured as a result of assault, abuse, battering or neglect.

All members of society are being affected by major economic and social change, the constraint of a slow-growing economy, and the difficulties that governments face in increasing taxes and sustaining, let alone increasing, public expenditure in a slow growth economy as assessed by the TFP measure. There is evidence that Ontario has done a much better job of sustaining the quality of its social environment during this period of change than the United States and other provinces.⁹³

An economy with flat TFP creates problems for governments in sustaining social safety nets and publicly financed programs in health care and education. Since the mid 1970's government programs have grown to exceed the economic and politically acceptable taxation capability of government. Caught in this complex period of major technological and economic change, all Canadian governments, regardless of political leaning, have had to cut public expenditures. One example of this is the reduction of transfer payments to individuals and the cuts or curtailment of health care and education spending. Given these realities, how do governments make early child development a priority?

ECONOMIC GROWTH AND GOVERNMENT PRIORITIES

In writing about the importance of the new understanding of the determinants of economic growth in relation to technological innovation, the Economist magazine wrote:

*"... it is to be hoped that its [the new understanding of the determinants of economic growth] biggest effect will be to reorder the economic-policy agenda. This is influenced more than most politicians would admit by debates that they barely understand - witness Keynes and demand management after 1945, or Milton Friedman and the monetarism of the 1970s. The new growth theory confirms that governments are mistaken to concentrate so exclusively on the business cycle. If, however indirectly, it leads them instead to think harder about education, investment, research and development, trade reform, intellectual-property rights and so on, it will be a breakthrough indeed."*⁹⁴

In these complex times, what should a government's priorities be? One that should be dominant is the future quality of the population, particularly its competence and coping skills. We agree with the general point set out in the article in *The Economist*.

Because of what is set out in Chapter 1, it is clear the early years must be a high priority for investment if we wish to have a competent, educated population for the future and that the Ontario government must put in place a long-term policy to make early child development and parenting a priority for public and private investment.

There is general agreement that improving the capabilities of the future population is essential to meet the challenges of technological change and globalization. But no one can predict what the specific future demands will be for Ontario's workforce 25 years from now. This means we must prepare a flexible, competent population that is able to adapt to change.

The early years period has to be at least of equal importance as education and post-secondary education as a priority for investment by the public and private sectors of society.

The entrants to the workforce of 2025 will be born next year. They will be a smaller cohort in proportion to the growing numbers of senior citizens. Since this generation will be a key factor in determining the wealth base of Ontario in 25 years, it must be a competent workforce. The new understanding of brain development informs us that the period from conception to six years, particularly the first three years, sets the base for the quality of the future workforce.

Ensuring that all our future citizens are able to develop their full potential has to be a high priority for everyone. It is crucial if we are to reverse "the real brain drain."

WOMEN IN THE LABOUR FORCE, CHANGES IN FAMILY STRUCTURE, AND THE STRESS ON FAMILIES

The Western world has seen a dramatic increase in the participation of women in the labour force. The most common family structure is no longer the "nuclear" family - the father working outside the home and the mother at home full-time working in the role of housekeeper and child care-giver. The predominant family structure is now one in which both parents work in the labour force, and arrangements are made inside or outside the home for child care. This revolution is associated with families having children at a later age, and having fewer children.

In Canada, female participation in the labour force has increased from 25% in 1951 to more than 60% today.⁹⁵ The participation rate for women in the 25 to 44 aged bracket is more than 75%.⁸⁷ More than 67% of women with children aged zero to 11 years are in the labour force.⁵¹

In Ontario, the majority of young children live in two-parent, dual-earner families.⁵¹ The rapid influx of women, including mothers with young children, into the workforce has helped to maintain family income levels, in spite of the restructuring of the economy. The labour participation rate for all women with children between zero and six years, has increased to 65.5% in 1995; 20.7% are working part-time (less than 30 hours) and 44.8% are working full-time.⁸⁷ In Ontario, the part-time

and fulltime labour force participation rate of mothers with children zero to 11 years living in two-parent families is 73% compared to only 47% for mothers who are single-parents.⁵¹

The rapid increase of women's participation in the labour force is producing continuing pressure to shift social and economic policies. Attitudes and institutional structures have not caught up to the full implication of the changes. Our investments and policies were designed for the older concept of male breadwinner and female homemaker and child care-giver. Our institutions and policies have to change to meet the new reality.

The increased involvement of women in the labour force has coincided with dramatic changes in family structures.⁹⁵ In Canada, the rapid increase in single-parent families from about 6% in the early 1970s to about 16% today has added to the complexity of parenting support in early childhood. The rise of single-parent families in Ontario is similar to Canada and the United States. Today more than 20% of births are to unmarried women. In contrast to popular belief, only 20% of these births are to teenagers.

The majority of single-parent families today are headed by women who have separated or divorced. Most remarry to form new two-parent step families. In 1994 in Ontario, among children zero to 11 years:⁵¹

78) 15% were living in single-parent families;

79) 23% had experienced divorce or the separation of their parents; and

80) 9% were living in step-family situations.

The changes in families and the increasing participation of women in the labour force has led to new strategies for caring for young children.

If both parents work, systems of supplemental care have to evolve to care for young children. Over the last 25 years, there has been an increase in non-parental care arrangements. In 1995, 40% of Canada's 2.3 million children zero to five were in some form of non-parental child care. These children spent on average about 27 hours per week in non-parental care.⁸⁷ Thus, even with more women in the paid workforce for most of the time, parents are the primary care-givers.

Parenting has a major effect on the early stages of child development. What effects are the economic changes having on parenting? In an analysis from the National Longitudinal Survey of Children and Youth of the effects of parenting style on child development, it was found that parents who embodied a rational, responsive approach that included reasoning with the child, had the best outcomes in terms of the child's cognitive and behavioural development.⁹⁶ Poor parenting, described as permissive and irrational, produced the worst outcomes. An interesting finding was that poor parenting was present in all socio-economic sectors and although a slightly higher incidence of good parenting was in the middle and upper SES (socio-economic status) sectors, it was also strong in the lower SES sectors. This is discussed in Chapter 3.

Given the economic and social changes, the time that parents have to be engaged with their children and their support outside the home will be important factors in early child development. Analysis of the National Longitudinal data⁹⁷ found that mothers working full-time outside the home have consistently lower levels of engagement than mothers working part-time or mothers staying at

home. Among mothers with a low family income, the extent of engagement of mothers working full-time was substantially less than for mothers staying at home or mothers working part-time. For low income families with limited support outside the family, this is a problem.

The Canadian Policy Research Network has characterized the Canadian family as being increasingly stretched.⁹⁸ In the 1995 survey of work it was found that 25% of women with children wanted more hours on the job while less than 10% wanted fewer hours.⁹⁹ The evidence shows that parental engagement with children is related more to time available than it is to the level of family income or parents' level of education.

In the next section we will show that many children in all social classes are not developing as well as they should. Some of this is probably related to parenting engagement and to the availability and quality of care outside the home. Since women are now an important part of the paid labour force, it is important for employers (private and public) to develop policies for early child development that are sensitive and relevant to our changing socio-economic circumstances.

Given the economic changes, the increasing participation of women in the labour force and changing family structures, it is not surprising that there is concern about family stress and the effects on children. Many parents who are in the labour force are experiencing what has been called the "family time deficit", which is associated with difficulties in balancing of work and family responsibilities. In a study of stress among men and women aged 25-44 employed full time, one-third of the married women with children and 22% of the single-parents reported they were highly stressed.¹⁰⁰

It's 5:30 a.m. and mom is up already, making lunch for her school-age child, sorting the laundry she was too tired to take out of the dryer last night, and practicing a presentation she has to make at work at 8:30 a.m. Soon her toddler will be awake, wanting to play and taking forever to be dressed and fed before being dropped off at the child care centre on the way to mom's workplace. Not exactly on the way, but closer than the last place and better, though it costs more. Dad is in charge of breakfast for the older one and getting her to school. As long as no one is sick, all goes well until the end of the day, when the scramble begins again. If you are late to pick up your child at the child care centre, there is an extra charge they can't afford. They feel the older one is really too little to be left in the house alone after school, but sometimes it happens. Some days, the schedule just seems impossible to manage.

Although there are economic pressures on families, until recently Canada has done better in comparison to the United States in sustaining incomes. We have not seen the same growth in income inequality as in the U.S. and there is less evidence of polarization of incomes as assessed by changes in distribution of middle-class income.⁹³

The Vanier Institute of the Family provides this commentary on the Canadian family in these changing and complex times:

"For Canada and Canadians to prosper in the 21st century, we must find ways to harmonize the demands of paid work and the responsibilities of family life. Achieving a

balance between employment and family is a key strategy for increased productivity, enhanced creativity, global competitiveness, family security, and civic vitality. So pervasive is the issue in our everyday lives that such a balance also holds the promise of improving the healthy development of our children and the well-being of our individual lives as men and women.

...The Work and Family Challenge, as it has been called, is the pivotal issue that confronts Canada and all other industrialized nations as we enter the new millennium. The issues embedded in the revolutionary restructuring of modern economies and the equally profound changes to the patterns of family formation and functioning confront us as individuals, as family members, as employers, community members and citizens.”¹⁰¹

In discussing women in the workforce, the Economist magazine recently concluded:

“Start by recognizing that the clock cannot be turned back. Modern economies could not function without women workers, and few women now would want to function without jobs...governments, employers and individuals need to rethink their roles.”¹⁰²

We concur with this conclusion.

CONCLUSION:

- ◆ Our future depends on our ability to manage the complex interplay of the emerging new economy, changing social environments and the impact of change on individuals, particularly those who are most vulnerable in their formative early years - our children.
- ◆ There is evidence of significant stress on families and early child development in the present period of major economic and social change.
- ◆ A key strategy for improving the capabilities for innovation of the next generation of citizens is to make early child development a priority of the public and private sectors of society.
- ◆ Facing the work, family and early child development challenge is a shared responsibility among governments, employers, communities and families.
- ◆ Since a competent population that can cope with the socio-economic change is crucial for further economic growth the subject of early child development must be a high priority for a society and its governments.

CHAPTER 3

HOW ARE ONTARIO'S CHILDREN DOING?

There are approximately 900,000 children up to the age of six in Ontario. Every year, as 150,000 new babies are born, about that many (plus children immigrating to Ontario) turn six and enter grade one. We now know that by age six, many of the critical periods for early brain development are over or waning. This chapter examines how well Ontario's youngest children are doing in light of the new understanding of early brain development and its effects on learning, behaviour and health throughout the life cycle, and in light of the pressures on families with children in this period of major socio-economic change.

In this chapter we will:

1. Highlight the key findings;
2. Consider indicators of early child development in Ontario;
3. Compare Ontario's literacy performance with other jurisdictions;
4. Discuss the concept of "vulnerability";
5. Argue for better outcome data in Ontario; and
6. Summarize an overview of the performance of Ontario's children.

We have heard anecdotal accounts from people in various service sectors, such as education and mental health, that they are seeing more children with learning, behavioural and other problems. But the scattered record systems that were available to us made it difficult to obtain firm evidence about what has been happening to Ontario's children over the last 25 years. Therefore, we turned to two recent major sources of data that at least allowed us to look at the present status of Ontario's children:

- 81) The National Longitudinal Survey of Children and Youth (NLSCY), which has gathered information on more than 20,000 children across Canada; and
- 82) Statistics Canada, working in cooperation with the Ontario Education Quality and Accountability Office (EQAO), which is the body responsible for school testing results and using the general census data.

We have interpreted these data in relation to what we now know about brain development reviewed in Chapter 1.

KEY FINDINGS

Overall, we have found that:

- 83) About one-quarter of Ontario's children from birth to age 11 are experiencing a learning or behavioural difficulty. Some of these children are vulnerable to future problems because learning

and behavioural problems as a result of poor brain development in the early years have been shown to correlate with difficulties later in school performance, social adjustment and health.

- 84) Ontario children did not do as well as the rest of Canada on the pre-school (age four to five) vocabulary test or the school-age (six to 11 years) mathematics test. The gap on the mathematics scores between Ontario and Quebec by grade six was one grade level. The level of behavioural problems among pre-school children was slightly less in Ontario than in the rest of the country. Ontario's rate of low birthweight was better.
- 85) The highest proportion of children who are experiencing at least one serious learning or behavioural difficulty is in the lowest socio-economic group. Step-by-step, up the socio-economic ladder, there is a declining proportion of children who are having difficulties, but there is still a significant number of children having difficulties at each step, including the top one. There is no socio-economic threshold above which all children do well. This is expressed graphically as a gradient. Because of the size of the middle class, the largest number (rather than the highest percentage) of children who have a serious difficulty are in middle-income families.
- 86) Looking at selected communities across Ontario, those that are lower on the socio-economic scale tend to have a higher proportion of low birthweight babies, and children who are performing below provincial standards on grade three mathematics, reading and writing tests. However, there are communities with similar socio-economic characteristics that are doing much better than others. There are also communities with a relatively high percentage of low-income families whose overall test scores are as good as or better than wealthier communities. We need to understand the factors influencing the differences between these communities. How is it that some communities with similar socio-economic circumstances do better than others?
- 87) Where families fit on the economic ladder affects the likelihood of children having less than optimal developmental outcomes. But income is not the whole story. Many children in low-income families are doing just fine, and some children living in affluence are not doing well. What other factors are making a difference? A powerful factor is parenting, and there is new evidence to substantiate its effect.
- 88) Community initiatives and public policies to improve the outcomes for children in the early years cannot be achieved without suitable outcome measures. Policies may be misdirected if we have no reliable estimate of how as a society we are doing in terms of early child development.

Socio-economic Status and Health

We include socio-economic status in our analysis because of what has been called the "social patterning" of health.¹⁰³ Social patterning means, in very simple terms, that the higher people are on the socio-economic ladder, the healthier they are. This pattern holds true even in relatively rich countries like Canada where the majority of the population lives well above the level of severe deprivation. The Manitoba Centre for Health Policy and Evaluation (MCHPE) is among the pioneers in this whole area in Canada. Using its comprehensive population database, the MCHPE found that the life expectancy of Manitoba men in the lowest socio-economic group is 11 years shorter than men in the highest category.¹⁰⁴ (See **Table 3.1**) Furthermore, the relationship of life expectancy to income quintile is a gradient.

There is increasing evidence that the early years of development have a major influence on social patterning of learning, behaviour and health risks in later life.¹⁰⁵

There is international interest in this issue. *The Independent Inquiry into Inequalities in Health Report*⁷³ in the United Kingdom discusses the influence of socio-economic factors on health, and zeroes in on the early years because of their significance in setting health risks for later life.

In presenting the data on how Ontario children are doing, we show how the results look when socio-economic circumstances of the family are taken into account. In every case, there is a gradient. That is, if you plot the results on a graph, there is a sliding scale - those in the highest socio-economic category have the lowest incidence (whether it is low birthweight, low vocabulary or mathematics skills or behavioural problems); those in the lowest socio-economic category have the highest incidence, and the middle socio-economic groups fall in between. Thus in every group, from the top of the socio-economic hierarchy to the bottom, some families and children are affected.

The measures that we analyse in this chapter are predictors of the likelihood that some young children will have problems in learning, behaviour and health later in life. The findings are compatible with new knowledge about the effects of early brain development. The fact that these measures show a gradient against the socio-economic status of the family is compatible with new understanding of social patterning.

TABLE 3.1 - HEALTH CHARACTERISTICS WINNIPEG, 1986

		INCOME QUINTILE				
		POOREST				RICHEST
		Q1	Q2	Q3	Q4	Q5
DEATH RATE /1000 POPULATION	MALE	13.7	10.2	8.7	7.8	6.2
	FEMALE	9.4	8.0	7.3	6.7	6.6
LIFE EXPECTANCY (YEARS)	MALE	65.3	70.5	72.8	74.3	76.6
	FEMALE	74.4	77.8	79.5	80.0	82.1

ROOS AND MUSTARD (1997)

ESTIMATES OF EARLY CHILD DEVELOPMENT IN ONTARIO

We were able to make use of three sets of data to create a picture of the present status of Ontario children in the early years. The data concern: birthweight, results from the National Longitudinal Survey of Children and Youth, and the grade three test results from the Ontario public schools.

Birthweight

The first set of data we consider here deals with the rate of low birthweight. Birthweight is an important outcome measure because it is an estimate of the crucial very early period of child development from conception to birth. A portion of low birthweight children has a greater risk of poor development and health throughout life.^{106, 45} There are steps that are well understood that can reduce the incidence of low birthweight children (e.g. pregnant women who refrain from smoking, consuming alcohol or using other drugs, who eat properly, and have good social support, are more likely to deliver full-term, normal weight babies).

How to Read Figures 3.1-3.4¹⁰⁷

The horizontal axis represents the percentage of people living below the Statistics Canada Low Income Cut-off (LICO) in the region. The communities clustered on the right have a lower proportion of low-income residents in their region than those farther to the left. The regions on the right have a higher socio-economic status than the regions on the left.

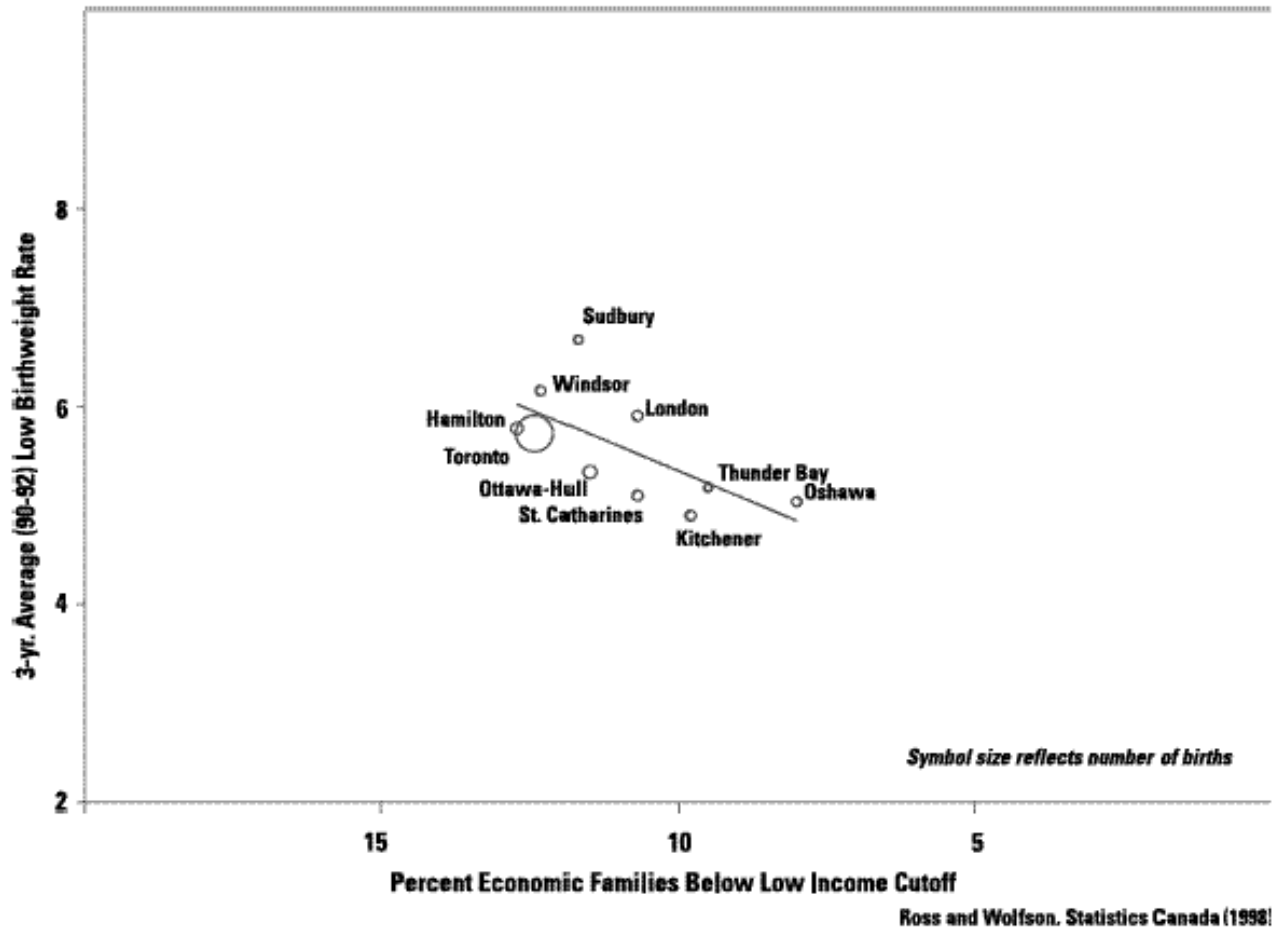
The vertical axis represents the percentage of babies who are born with a low birthweight. The bottom of the axis is a very low rate, and the top is a higher rate of low birthweight babies.

The dots represent municipal areas in the province. The size of the symbols (the dots) reflects the number of births, which is related to the population. Therefore, Toronto is the biggest circle in 3.1. The information is from an average of the births from 1991-1993.

The line represents the simple statistical relationship between the low birthweight rate (based on a three year average) in a community and the percentage of families living below Statistics Canada's LICO. The line shows a slope or a gradient which means that, overall in Ontario, the low birthweight rates in a region increase as the percentage of families below the LICO increases.

Figure 3.1 shows the birthweight data for the census metropolitan areas (large urban areas) in Ontario. Communities such as London and St. Catharines have approximately the same percentage of families below the Low Income Cut-off (approximately 11%), but the rate of low birthweight is about a percentage point higher in London (6%) compared to St. Catharines.

FIGURE 3. 1 - LOW BIRTHWEIGHT BY LOW INCOME,
(CENSUS METROPOLITAN AREAS IN ONTARIO, 1991)



The contrast for the city census subdivisions (municipalities or their equivalent) is even more striking in Figure 3.2. For example, Nanticoke and Barrie are not all that different in socio-economic terms (Barrie has a slightly higher proportion of low-income residents). But there is a large gap in their low birthweight rates even though we have a publicly-financed health care system. Nanticoke is close to 7% and Barrie is below 4%. An important question is: what factors account for these differences among communities? Particularly, what is it that allows some communities to buffer adverse effects of low socio-economic status on children's early development?

FIGURE 3. 2 - LOW BIRTHWEIGHT BY LOW INCOME,
(CITY CENSUS SUBDIVISIONS IN ONTARIO, 1991)

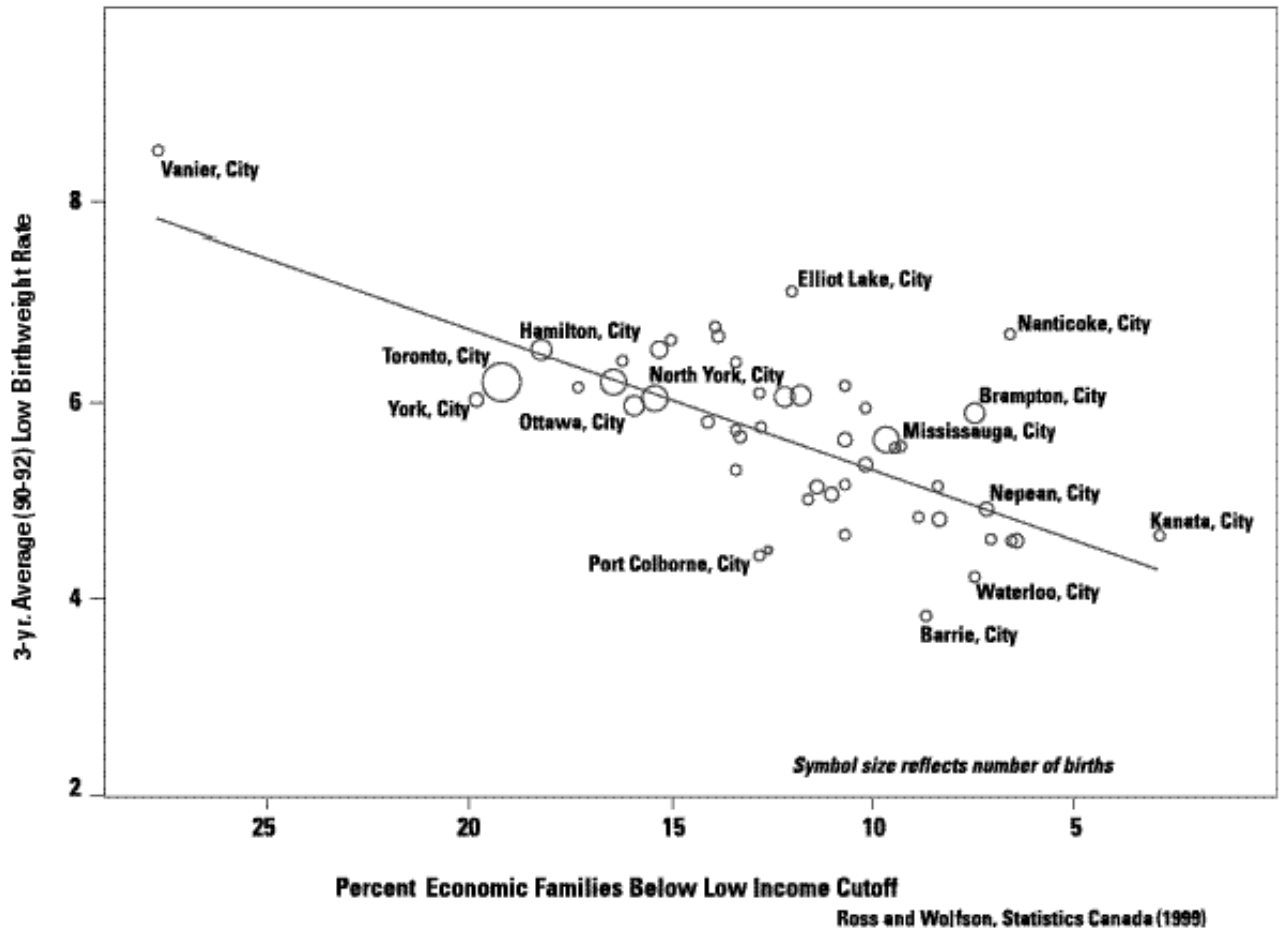


Figure 3.2 also shows the most striking gap in birthweight rates between census subdivisions in Ontario.

Kanata, a prosperous community in the Ottawa region, has an average rate of low birthweight of about 5%, while Vanier, a less prosperous community in the same region a few kilometres away, has a rate of about 9%. Why?

FIGURE 3.3 – LOW BIRTHWEIGHT BY LOW INCOME,
(CENSUS SUBDIVISIONS WITHIN OTTAWA CMA, 1991)

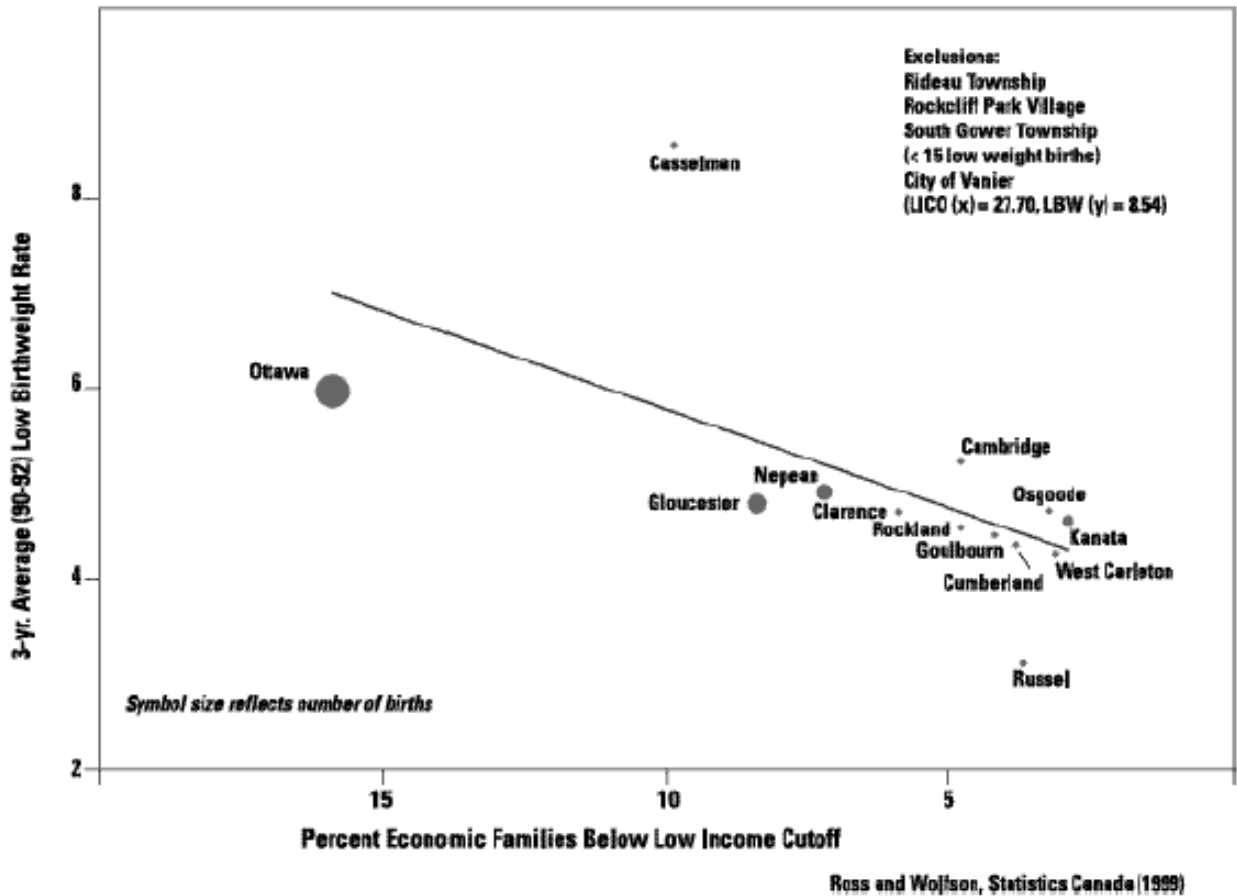
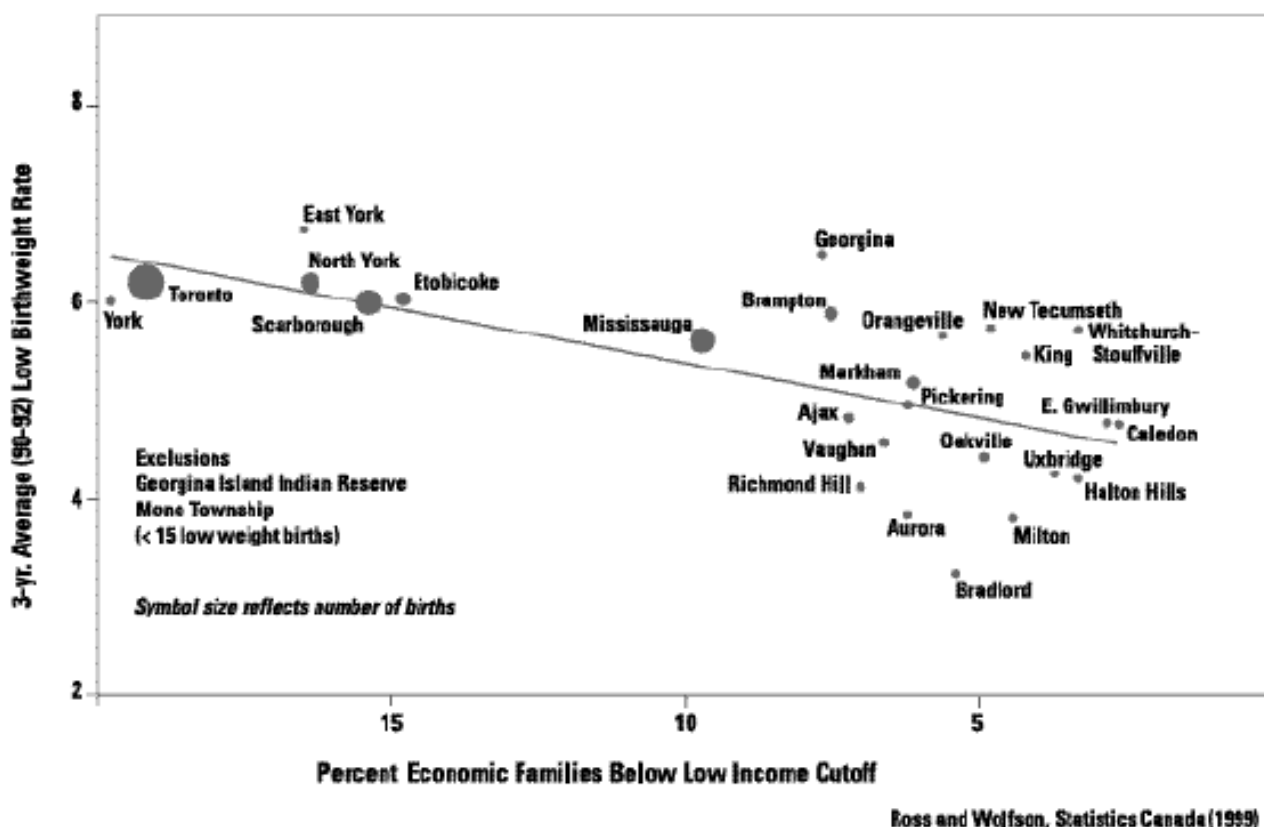


Figure 3.3 shows the Ottawa Census Metropolitan Area (CMA) and Figure 3.4 below, shows the Toronto CMA. The gradient is clear in the Ottawa CMA; the City of Ottawa, which has a far higher proportion of low-income residents compared to the other parts of the region, also has a higher rate of low birthweight. Casselman, which is moderately prosperous, has a rate similar to Vanier, which is a much less prosperous community. (Vanier is not shown on Figure 3.3 but would appear in the extreme upper left corner if the horizontal axis was extended to include lower income communities.)

FIGURE 3. 4 - LOW BIRTHWEIGHT BY LOW INCOME,
(CITY CENSUS SUBDIVISIONS WITHIN TORONTO, 1991)



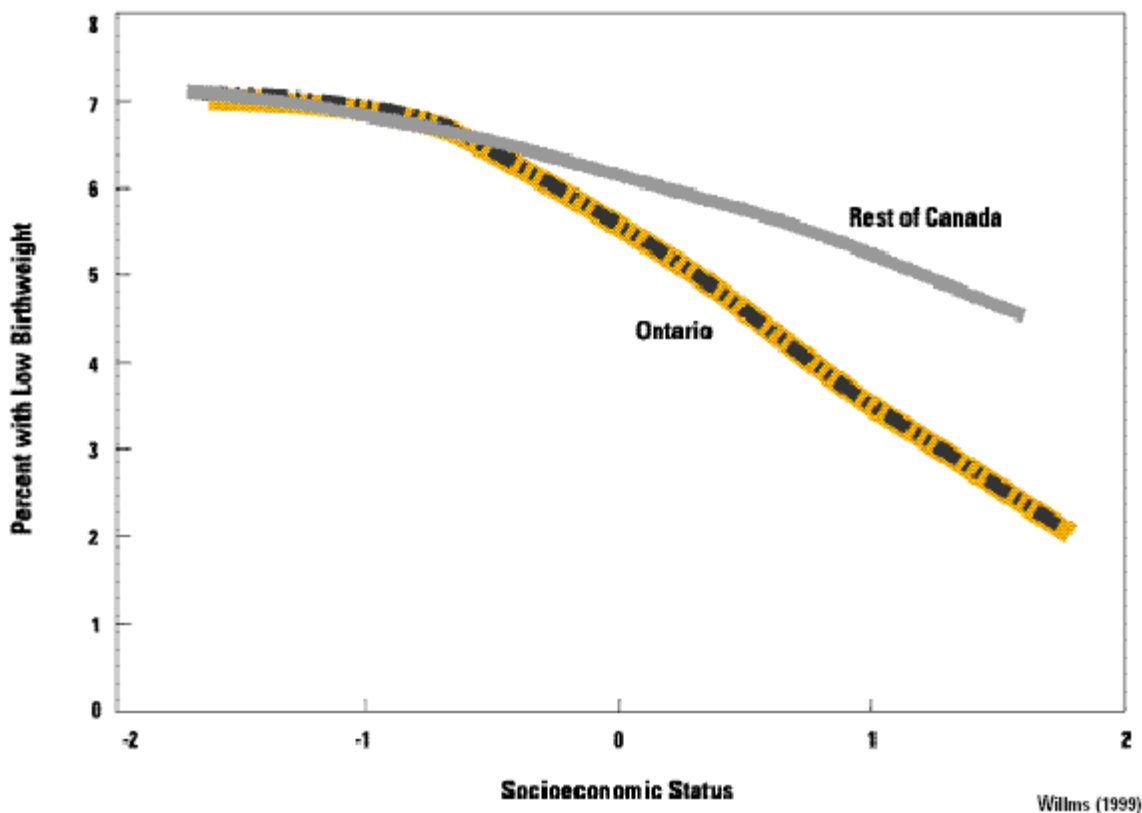
Toronto (Figure 3.4) does not show the same steep gradient. The inner city, which has almost the highest percentage of low-income residents, does not have a markedly higher rate of low birth weight births compared to more prosperous communities such as Mississauga, Brampton and Orangeville. Why do communities such as Bradford, Milton, Aurora and Richmond Hill do better than Brampton, Orangeville, King and Whitchurch-Stouffville?

An additional source of low birthweight data was available from the National Longitudinal Survey of Children and Youth (NLSCY). The NLSCY is a long-term survey, under the aegis of Human Resources Development Canada and Statistics Canada, designed to measure and track the health, development and well-being of children from birth into adult life. The NLSCY has individual data, which allow the assessment of individual socio-economic status and birth weight. (For further description of NLSCY, see page 77.)

Figure 3.5 shows a comparison of Ontario's low birthweight rate compared to the rest of Canada in 1994 from the NLSCY data.¹⁰⁸

FIGURE 3.5 - SOCIOECONOMIC GRADIENTS FOR LOW BIRTHWEIGHT, CHILDREN AGED 0 TO 3

National Longitudinal Survey of Children and Youth, 1994 Willms (1999)



How to Read Figure 3.5

The horizontal axis is a different representation of socio-economic circumstance than that found in the first four graphs. It represents a composite measure of socio-economic status which includes income and mother's and father's occupation and education. On the left side of the horizontal axis (from -1 to -2)* are individuals with the lowest SES (about 15% of the population). This group has the highest proportion of people living below the LICO, the lowest levels of education, the greatest proportion on welfare, and the highest unemployment, compared to other levels of the socio-economic hierarchy. Between -1 and +1 are approximately two-thirds of the population who are in the low-middle to upper-middle SES group. The highest SES group, +1 to +2 is about 15% of the population.

The vertical axis represents the percentage of births with a low birthweight (similar to the vertical axis found in Figures 3.1 to 3.4).

* The figures represent standard deviations in the composite measure of socioeconomic status (SES).

The curved line is the representation of the statistical relationship between the SES index and the low birthweight rate.* In this graph the relationship is curved but is still a gradient; on the left side, children born to parents in the lowest SES group (-2) have the highest low birthweight rate (over 7%), while those in the highest SES group (+2) have the lowest percentage of low birthweight rates (just over 2%).

Figure 3.5 shows that Ontario does better, especially among the mid-to-upper socio-economic groups compared to the rest of Canada. The largest number of low birthweight babies is actually in the middle group. While the highest low birthweight rate is in the lowest SES group (-2), there are far more low weight births within the -1 to +1 SES groups, which represent over 60% of all births.

These findings, in general, are compatible with what has been known for some time - that mothers in low socio-economic circumstances are more likely to have low birthweight babies. However, there are questions that need to be explored. For example, why do some regions with the same proportion of families below the LICO do better than others? What can be done to improve pregnancy outcomes for women in low socio-economic circumstances?

All mothers have access to prenatal medical care, so it is doubtful that lack of health care is the major factor influencing birthweight in low socio-economic circumstances. Birthweight data from Manitoba (discussed in Chapter 1) suggest that non-medical factors (such as nutrition, work environment and access to resources) may be more important for pregnant women than prenatal medical care.⁴⁵ What happens *in utero* has significant effects on all aspects of development, including the brain. It is clear that one step to improve the outcome for children in the early years is to reduce the rate of low birthweight in regions with high rates. One conclusion from this analysis is that there are regions in this province where we can substantially improve the outcomes of pregnancy which influence the base for early child development.

* The line is calculated through logistic regression analysis and is used to determine the likelihood of low birthweight along the SES scale.

National Longitudinal Survey of Children and Youth¹⁰⁹

Because of the large scope of the project - 22,831 Canadian children were surveyed, including 6,020 in Ontario, in the first cycle of the survey in 1994-95 - it has developed a major national database on the characteristics and experiences of children across the country. The children are a representative sample, from newborns to age 11 from all sectors of society. Data are being collected every two years; new children (from newborns to two years old) will be added to the sample and the age span will move upwards for each cycle. The Cycle 1 data are cross-sectional, that is, the data are collected from a cross-section of the population at a single point in time. Future cycles will provide both cross-sectional and longitudinal data (as the NLSCY tracks children over time). During each cycle, the survey will gather extensive information on the child's family, parents and neighbourhood and assess how well children are doing, including academic achievement, health and well-being, and social skills.

The NLSCY collects data through a variety of instruments:

1. Household Questionnaire - completed with a knowledgeable household member and includes basic demographic information .
2. General Questionnaire - socio-economic information (adults' education, labour force activity and income).
3. Parents' Questionnaire - general information on social environment of parents and child (social support, family functioning and neighbourhood characteristics).
4. Children's Questionnaire - completed for a maximum of four children, newborn to age 11, in the household. Questions vary for age of child, but main topics include health, perinatal information, temperament, education, activities, behaviour, motor and social development, social relationships, parenting practices, child care, and family custody and history.*
5. Vocabulary Test - Peabody Picture Vocabulary Test (PPVT) - Revised for English-speaking children or the Echelle de vocabulaire en image for French-speaking children, administered by the interviewer. This test measures receptive or hearing vocabulary. The child looks at pictures on an easel and identifies which picture matches the word read aloud by the interviewer. The test is widely used in both large-scale data collections and assessments. The French version of the test and the Canadian norms were developed in collaboration with the test's developer.
6. Questionnaire for 10- and 11-year-olds - completed by children aged 10 or 11 who were in the NLSCY sample; collected information on relationships with others, behaviour, school experiences, views on parents, smoking, alcohol and drugs.
7. Questionnaire for teachers and principals - The teacher questionnaire collected information about the child's academic achievement and behaviour at school, and about characteristics of the class and the teachers' instructional practices. The principal's questionnaire collected information on school policies and educational climate.
8. Mathematics Computation Test - Children in grade two and above completed a short mathematics computation test of 10 to 15 questions, administered by the school teacher. The test was a shortened version of the standardized Canadian Achievement Tests, Second Edition. It measures understanding of addition, subtraction, multiplication and/or division of whole numbers.

* The "Person Most Knowledgeable" (who knows most about the child, usually the mother) provided information for the children's questionnaire, the parents' questionnaire and the general questionnaire. These questionnaires were administered through a computer-aided assisted interview.

EARLY YEARS OUTCOME RESULTS FROM THE NATIONAL LONGITUDINAL SURVEY OF CHILDREN AND YOUTH

Data and analysis from the National Longitudinal Survey of Children and Youth (NLSCY) enabled us to compare the performance of Ontario's young children with other regions of Canada on key learning and behaviour outcomes.¹⁰⁸

Vocabulary Skills and Behaviour at Ages Four and Five

The NLSCY provides two measurements of development in the first five years - vocabulary skills and behaviour. The NLSCY survey shows the cognitive performance and behaviours of pre-schoolers between Ontario and the rest of Canada, and across the socio-economic spectrum of families in Ontario.

Individual and family data are linked to socio-economic status. As with Figure 3.5 on low birthweight, these results are for individual children rather than aggregated data by region (which was the case for the birthweight data in Figures 3.1 to 3.4).

Figures 3.6, 3.7 and 3.8 are similar to Figure 3.5.

The horizontal line represents the SES status of families. On the far left side are children whose families are in the lowest SES group (about 15%) and on the far right side are children whose families are in the top SES group (again about 15%). The children whose families are between -1 SES (low-middle SES group) to those whose families are +1 SES (high-middle SES group) make up about two thirds of the population.

The vertical line represents the percentage of children with a poor outcome. At the bottom of the vertical axis, few children are experiencing difficulties compared to the top of the axis, where a larger proportion of children are having problems.

The line represents the statistical relationship between family SES and the numbers of children who are having problems.

FIGURE 3.6 - SOCIOECONOMIC GRADIENTS FOR LOW RECEPTIVE VOCABULARY CHILDREN AGED 4 AND 5

National Longitudinal Survey of Children and Youth, 1994

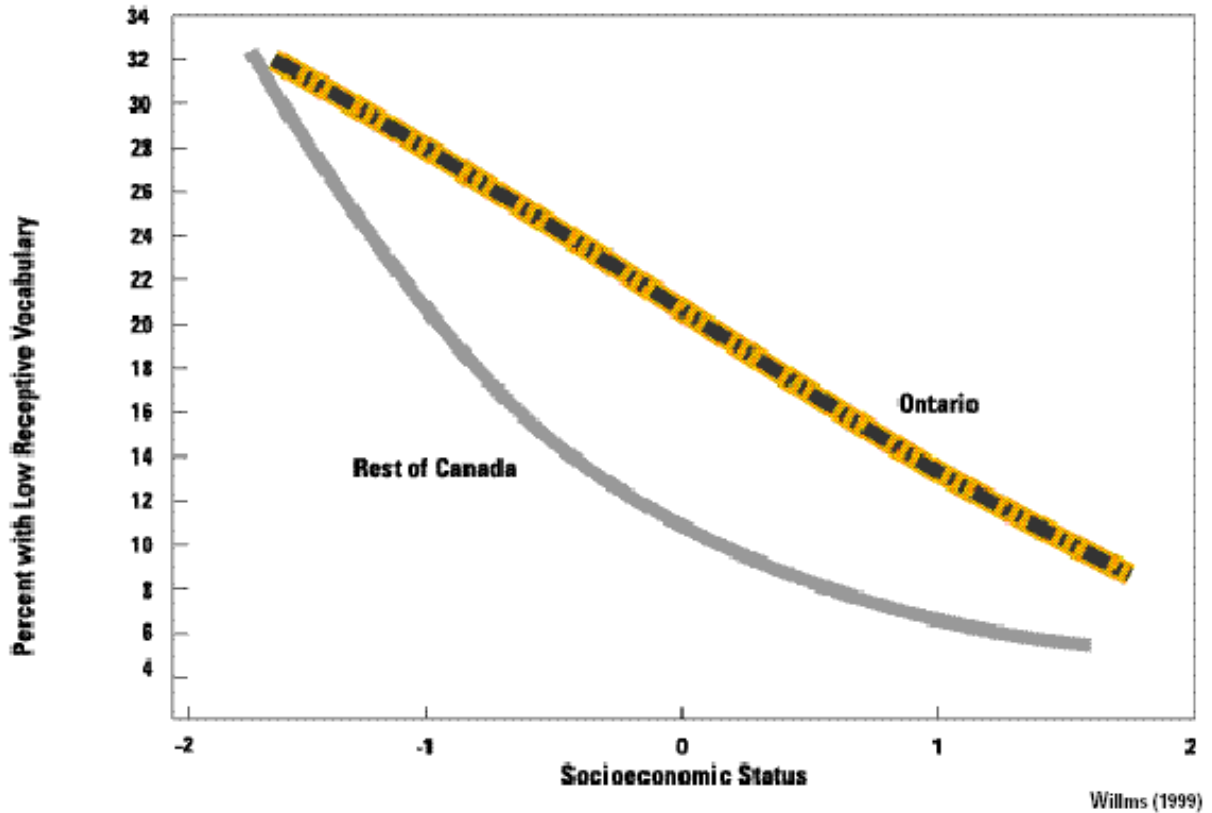
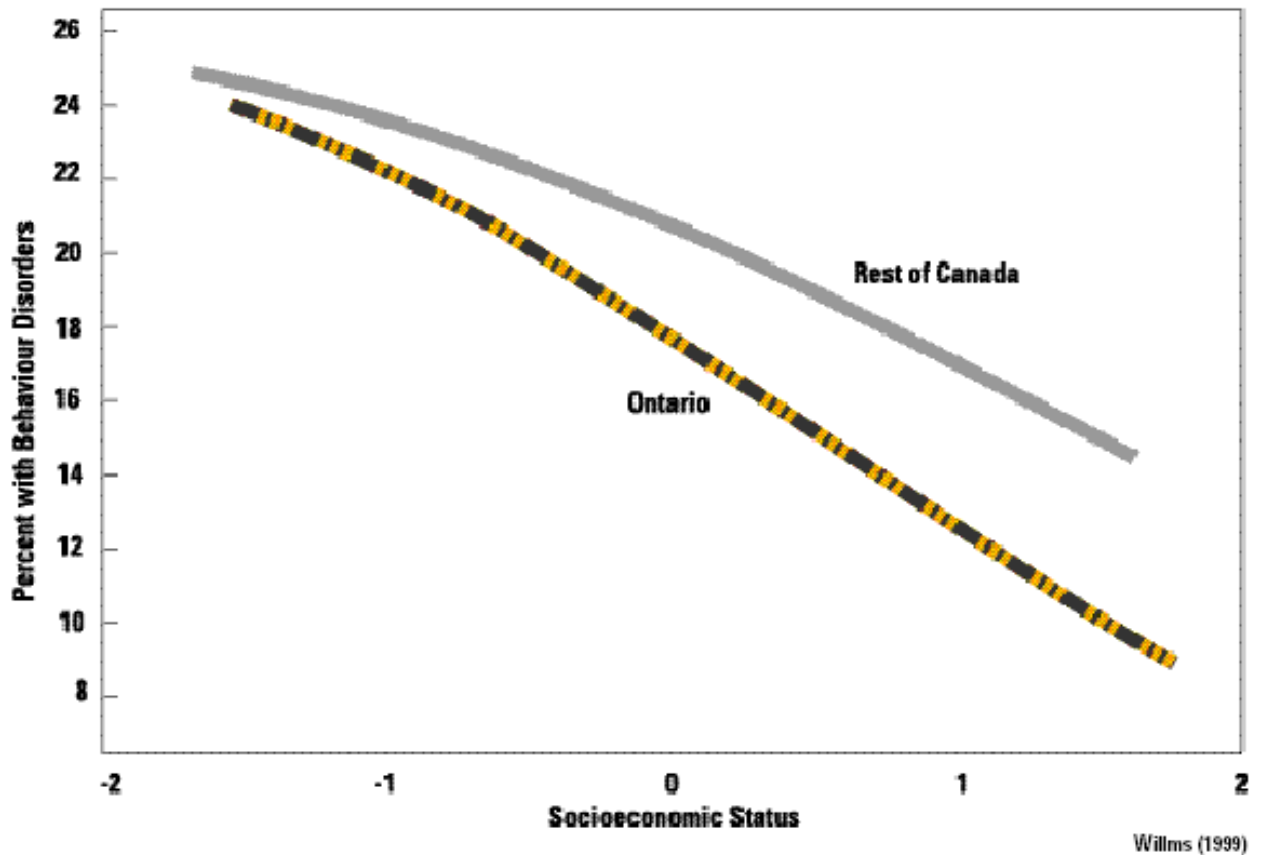


Figure 3.6 shows how Ontario children aged four and five years, did on the Peabody Picture Vocabulary Test administered by the NLSCY. It was not administered to younger children. A low receptive language measure (on the vertical axis) is one standard deviation (or 15 points) below the average score of 100. This is about a year to a year and a half behind normal language development.

Vocabulary skills at ages four and five are an outcome of brain development in the early years, and these measures are predictive of subsequent language and literacy skills for groups of children and potential behaviour problems. (This measure is designed for statistical uses; it is not sufficiently refined to predict individual outcomes and should not be part of individual records.) As evidenced in Chapter 1, this assessment of early child development for vocabulary skills is, for males, associated with incidents of teenage antisocial behaviour.

FIGURE 3.7 - SOCIOECONOMIC GRADIENTS FOR BEHAVIOUR PROBLEMS, CHILDREN AGED 4 AND 5

National Longitudinal Survey of Children and Youth, 1994

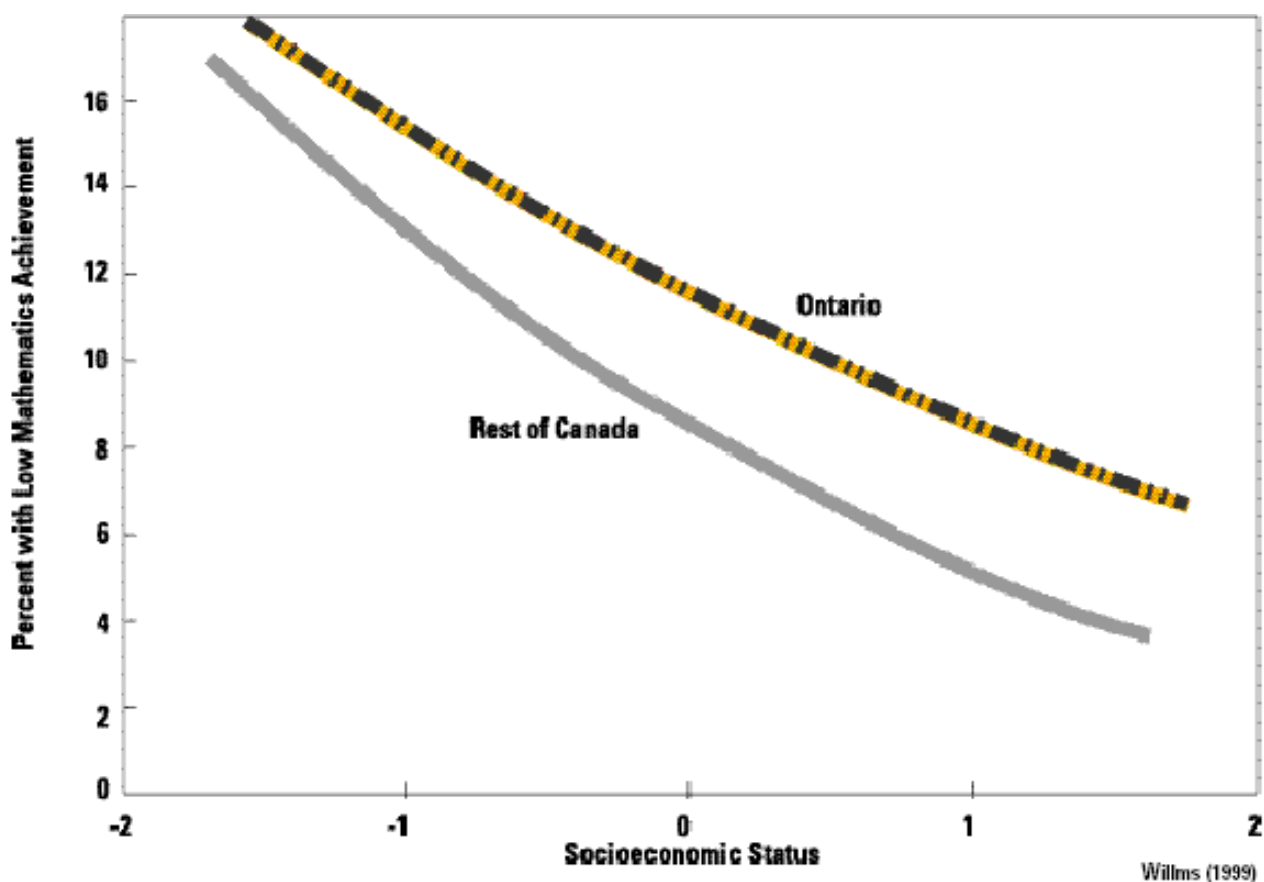


Ontario's four and five year olds do not do as well in vocabulary skills as the rest of Canada at every step on the socio-economic ladder. At every point on the socio-economic scale, there are a significant number of children who are performing below average. While 32% of the children in the poorest families do not do well, 10% in the highest-income families do not do well. Because of its size, the greatest number of children who are not doing well are in the middle of the SES scale. These data show that whatever is affecting performance of children is affecting all socio-economic levels. On the positive side, about 70% of children in the lowest socio-economic group do well. What factor or factors influence children in the early years in all social groups?

Figure 3.7 shows behavioural difficulties among children aged two to five years. Ontario does slightly better than the rest of Canada on this measure. Nevertheless, as with all the other indicators of child development examined, the behaviour measure of pre-school children show s a gradient - that is, there are children from all socio-economic groups who enter the school system with behavioural problems. There is no socio-economic threshold above which children have few or no behaviour problems. But the frequency of problems declines as one moves up the socio-economic ladder.

Together, the vocabulary and the behaviour measurements are a predictor of later performance in the school system, juvenile delinquency and other behaviour patterns, and health and well-being in adult life. If Ontario wants to improve overall school achievement, reduce antisocial behaviour, lower the level of juvenile delinquency, and create greater equity in health for the population in Ontario, we must look to improve the outcomes for children in the early years in all socio-economic groups.

FIGURE 3.8 - SOCIOECONOMIC GRADIENTS FOR LOW MATHEMATICS ACHIEVEMENT, CHILDREN AGED 6 TO 11
National Longitudinal Survey of Children and Youth, 1994



Mathematics Achievement in School

A substantial part of the ability to understand numbers and mathematics is set in the pre-school years (See Chapter 1). Unfortunately, we have no assessment of children's mathematical ability during the early period of development. But from the NLSCY database, we have a measure of mathematics achievement for children in Ontario aged six to 11 in relation to the rest of Canada. (See Figure 3.8)

The horizontal axis of Figure 3.8 uses the same measure of SES as in Figures 3.6 and 3.7. The vertical axis indicates the percentage of children from six to 11 who have low scores on the mathematics assessment. A low score is one that is one and a half grades behind for children age six to 10 and two grade levels behind for children age 11. Once more, the line, representing the statistical relationship between mathematics achievement and SES is a gradient.

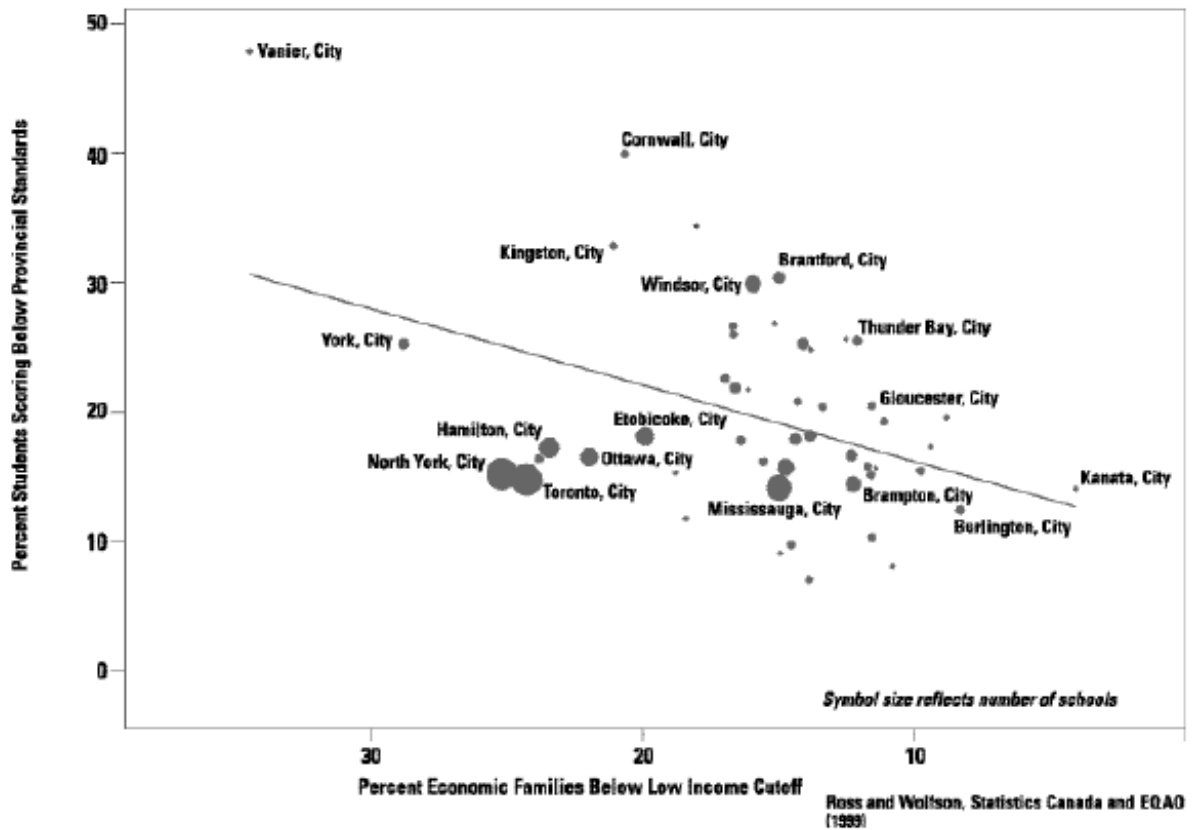
At every point on the socio-economic scale, Ontario children do not do as well as children in the rest of Canada on this measure.¹¹⁰ At the grade two level, Ontario was the only province which scored more than one month of schooling below the national average on the mathematics test, while five provinces (New Brunswick, Manitoba, Nova Scotia, British Columbia and Quebec) had scores that ranged from one to four months of schooling above the national average. The trend for the scores for Ontario from grade two to grade six suggests that students fall farther behind as they progress through the school system. In fact, by grade six, the mathematics achievement scores are a grade or a year of schooling behind those found in Quebec.

The gap in mathematics achievement is consistent with evidence gathered on international and Canadian studies of mathematics achievement over the past 15 years. The mathematics performance of Ontario students has consistently lagged behind other provinces and other countries.^{111, 112, 113} Although it could be claimed this result is a failure of the school system, we would argue, based on evidence from Case (discussed in Chapter 1) and Fuchs & Reklis (see Figures 3.15), that because the foundation for learning mathematics is set in the early years of child development, this result is at least in part a reflection of the quality of early child development rather than just the failure of the school system. For the curriculum to have its full impact, the early brain development related to the cognitive weight of numbers needs to be largely in place at entry to grade one.

GRADE THREE TEST RESULTS

School children across Ontario were tested in grade three in 1996-97. With the cooperation of the Ontario Education Quality and Accountability Office (EQAO), the Early Years Study asked Statistics Canada to take the test results in grade three mathematics, reading and writing and analyse the scores in each of the 52 municipal areas in Ontario against the socio-economic circumstances of the communities as assessed by percentage of families below LICO.¹¹⁴

FIGURE 3.9 - GRADE 3 MATH ACHIEVEMENT BY LOW INCOME, CITY CENSUS SUBDIVISIONS IN ONTARIO, 1996-1997



How to Read Figures 3.9, 3.10 and 3.11

The Ontario grade three test results data are presented in Figures 3.9, 3.10 and 3.11. As with the birthweight data (presented in Figures 3.1-3.4), these data are aggregated for city census subdivisions (not individual).

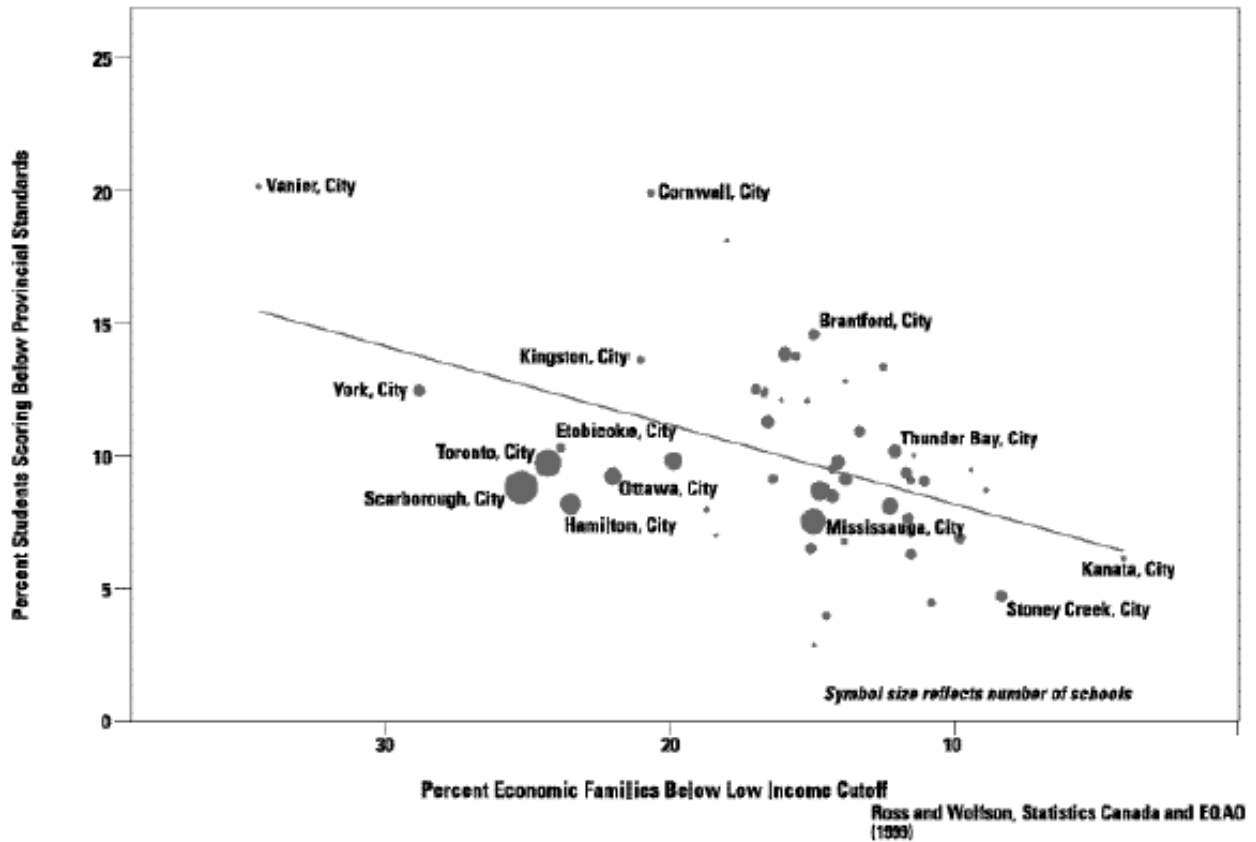
The horizontal axis is by percentage of families below the LICO.

The vertical axis represents the percentage of grade three students who are scoring below provincial standards for grade three achievement. At the bottom of the axis (0 percent) all children are meeting grade level standards. At the top end, 50 percent are scoring below the provincial standards.

The dots, as per the birthweight data in Figures 3.1-3.4, represent city census subdivisions. Their position on the graph is determined by the percentage of families below the LICO (on the horizontal axis) and the percentage of children scoring below standard. The area of the dots is roughly proportional to the number of students. (It, in fact, represents the number of schools.)

The line is the statistical relationship (unweighted) between the families below the LICO in a region and grade three achievement scores.

FIGURE 3.10 - GRADE 3 READING ACHIEVEMENT BY LOW INCOME, CITY CENSUS SUBDIVISIONS IN ONTARIO, 1996-1997

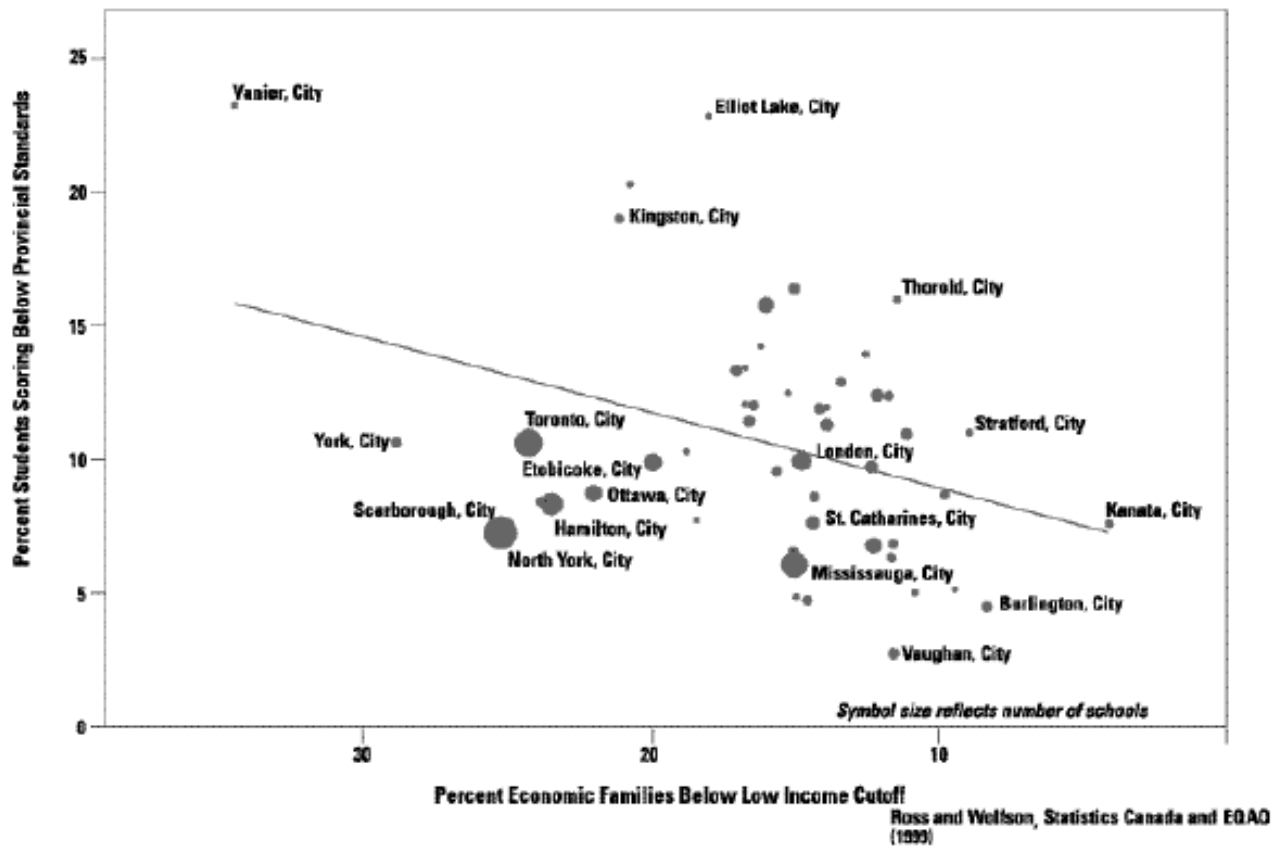


The story is similar to the findings for birthweight plotted against the percentage of families below the LICO in Figures 3.1-3.4.

As with the assessment for individuals from the NLSCY data, there is a gradient for mathematics achievement by city census subdivisions against socio-economic status as estimated by LICO. As with birthweight, Vanier and Kanata stand out as being very different. It is interesting to note that the incidence of crimes against victims for the city of Kanata was 7/1000 versus 45/1000 in Vanier for 1998.¹¹⁵ This may be a clue that the quality of the social environment is a factor influencing child development.

In general, children in more affluent communities do better than those in poorer communities (i.e. communities with a higher percentage of people living below the LICO). But there are examples where there is little difference in test results between communities with vastly different socio-economic profiles.

FIGURE 3.11 - GRADE 3 WRITING ACHIEVEMENT BY LOW INCOME CITY CENSUS SUBDIVISIONS IN ONTARIO, 1996-1997



For example, in Figure 3.9, there is little difference in the test results in mathematics between Toronto and Brampton, even though Toronto has about twice the proportion of low-income families.

Where socio-economic circumstances are similar, some communities do better than others in their children's school achievement. For example, in Figure 3.10, reading achievement scores in Brantford are not as good as reading scores in Mississauga, even though their percentage of low-income families is approximately the same. In another example, Figure 3.11 shows approximately 8% of the children are performing below provincial standards in writing in the City of Hamilton, which has a higher percentage of low-income families than in Thorold and other regions with fewer low-income families. Thorold and other regions with fewer low-income families do not do as well as those who live in Hamilton.

Are these differences just related to the schools or are they related to the characteristics of the communities and their effects on the early years of the life cycle? We have a hint from these data that what we are seeing in the school system may at least in part be a reflection of the early years, including pregnancy outcomes as displayed by birthweight (for example, Kanata versus Vanier).

NATIONAL AND INTERNATIONAL COMPARISONS - YOUTH LITERACY AND MATHEMATICS

We were able to compare Ontario's youth literacy and mathematics achievement with other jurisdictions. The conditions of early childhood are at the core of language and mathematics skill development. Through the work of Statistics Canada and the Organization for Economic and Cooperative Development (OECD), we have measures of youth literacy which reflect the effects of the early years and the impact of the school system. These data allow us to compare Ontario's performance with other provinces and allow us also to compare Canada internationally.

We have previously shown (in Figure 3.7) that Ontario's children perform below the national achievement for each socio-economic sector on the picture vocabulary test at age four and five years. Now we will turn to measures of youth literacy in Ontario compared to other provincial jurisdictions.

How to Read Figure 3.12

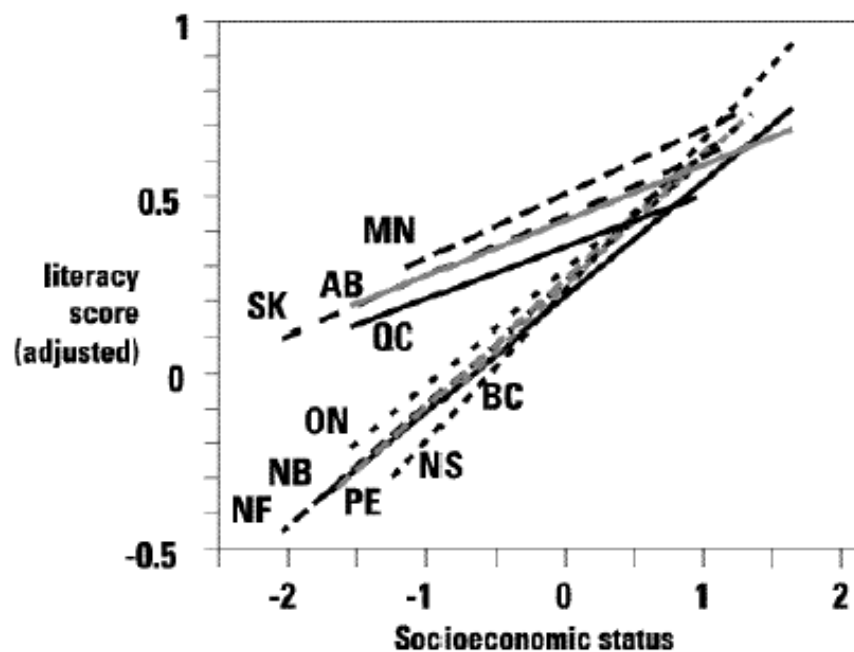
The horizontal axis represents the same composite measure of family SES as found in Figures 3.5, 3.6, 3.7 and 3.8. The lowest SES youths are found on the far left side at -2, while the highest SES youth are found at the far right side (+2). Again most of the population (about two-thirds) are found between the -1 and +1 points of the SES scale.

The vertical axis represents the scores of youth (aged 16 to 25) on the International Adult Literacy Survey (IALS) in 1994. The scores are a single measure of literacy which is based on the average score of three tests, standardized on the full Canadian population. A "0" score represents an average literacy score for all Canadian youth.

The lines represent the relationship in each province between the youth literacy scores and the family SES.

Figure 3.12 shows the gradients in youth literacy for Canadian provinces. Ontario does not do as well as Manitoba, Alberta, Saskatchewan and Quebec. The provinces are clustered into two distinct groups. Quebec and the three prairie provinces have relatively shallow gradients with high performance, while British Columbia, Ontario and the Atlantic provinces have relatively steep gradients.

FIGURE 3.12 - LITERACY AND SES GRADIENTS FOR YOUTH BY PROVINCE, 1994

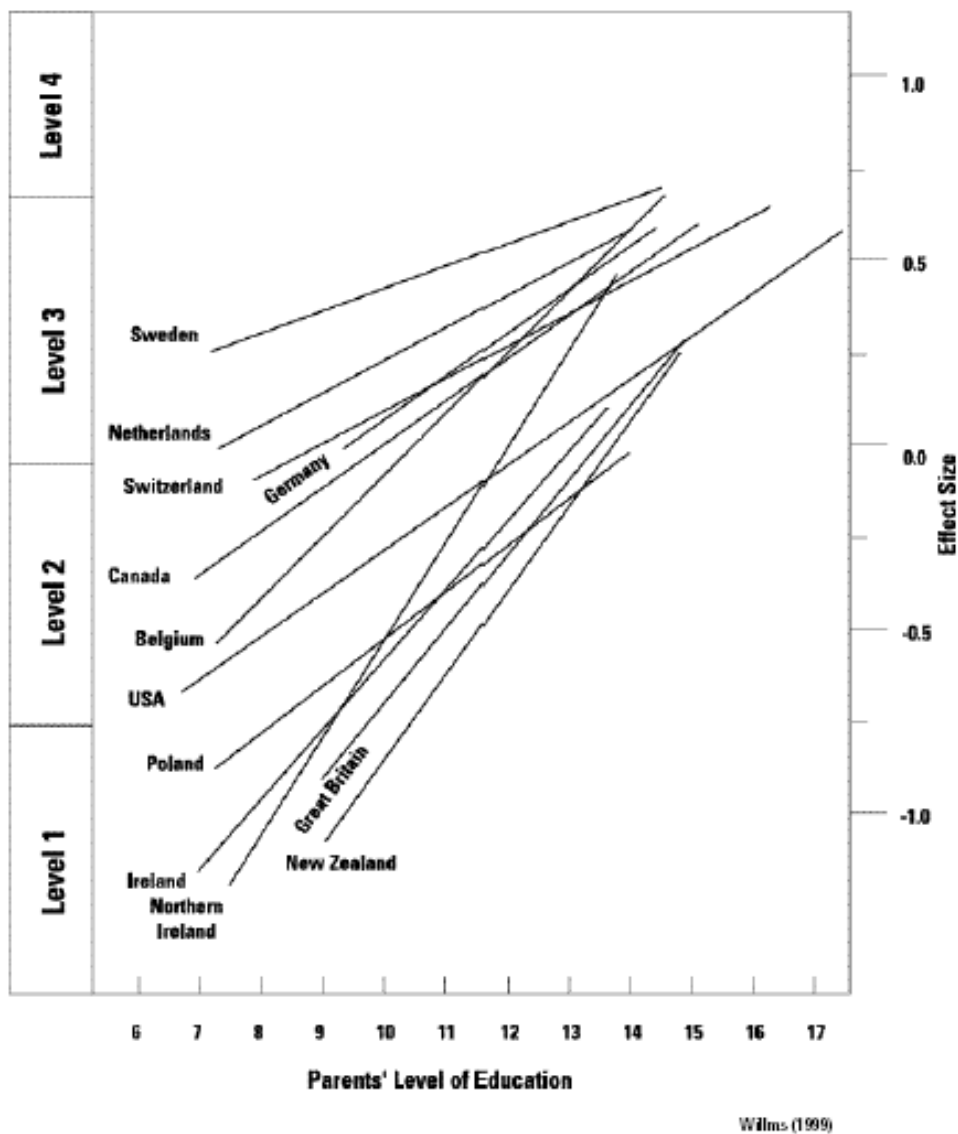


Willms (1997)

These clear differences among provinces raise questions about how much of this difference is due to the pre-school years and how much is due to the school system. The assessment of Doug Willms (from the Atlantic Centre for Policy Research in Education at the University of New Brunswick) is that both the pre-school and school periods influence literacy.¹¹⁶ In view of what we now know about brain development and the critical period for the development of language in the early years, it is clearly important to improve the pre-school period of brain development if we are to improve overall literacy for our population. The evidence presented in Figures 3.6 and 3.12 shows that Ontario families and children in all socio-economic groups have room for improvement.

The OECD analysis (Figure 3.13) looked at level of parental education and youth literacy in Canada and in other countries.¹¹⁷

FIGURE 3.13 - DOCUMENT LITERACY SCORES FOR YOUTH, AGED 16-25



How to Read Figure 3.13

The horizontal axis represents the numbers of years of parents' education for youth aged 16 to 24. Parent education level is a proxy measure of socio-economic status.

The vertical axis represents literacy scores on the 1994 International Adult Literacy Study for youth. The document literacy score is the measure of literacy used in the survey, standardized on the full Canadian population.

The lines represent the relationship between the youth literacy scores and level of parent's education for each of the jurisdictions.

Figure 3.13 shows there are striking differences among nations. Countries with high literacy scores tend to have shallow gradients, regardless of parents' level of education. Do the Swedes do better because they are a more homogeneous society or because their pre-school programs are of high quality and affect most of the population? (Swedish children do not enter the formal school system until they are seven years old.) Does the United States have a steep gradient because of socio-economic issues in its society and weak programs for early child development, as well as problems with their education system?

It would appear that regions can improve literacy for all children in different socio-economic groups if they wish to.

We now understand that the cognitive prerequisites on which later mathematics learning depends is strongly influenced by brain development in the early stages of life.

In the Third International Mathematics Study, Case, Griffin and Kelly looked at mathematics performance for children from a number of different countries against fathers' education. (Figure 3.14) Again, there is quite a striking difference among countries.¹¹⁸ Canada does better than New Zealand and the United States. Case and his colleagues suggest that the steep U.S. gradient is related to the poor pre-school development of America's children as shown in the work of Brooks-Gunn and her colleagues.⁶⁶ As shown in Chapter 1, pre-school interventions can improve mathematics outcomes in the school system. Case, Griffin, and Kelly concluded that we do not have to have lower scores. We know what to do to improve them.

Unfortunately, we do not have Canadian data which look at the impact of early years outcomes and later academic achievements. In years to come, these data will be available through the NLSCY. However, we do have American data. An assessment of pre-school cognitive and behavioural development in the United States and performance in mathematics in the school found that states in which children scored well in pre-school "readiness to learn" tests did well in grade eight mathematics tests.¹¹⁹

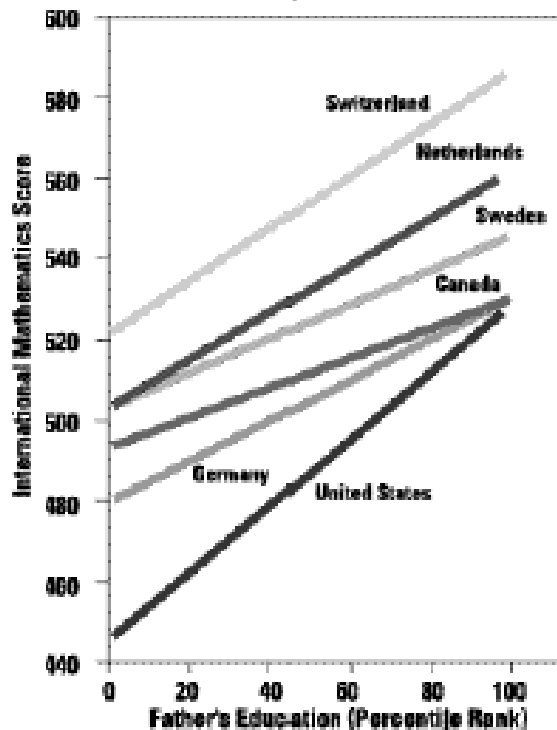
How to Read Figure 3.15

The horizontal axis represents the percentage of children ready to learn in kindergarten as assessed by kindergarten teachers in 1990. Teachers were asked to estimate the percentage of students who entered kindergarten ready to learn based on physical wellbeing, social skills, emotional maturity, language skills and general knowledge. The responses were aggregated together by state.

The vertical axis represents the results of the grade eight mathematics test of the National Assessment of Educational Progress by state in 1992.

The squares represent the 42 states who participated in the study. Their placement on the graph shows the 1990 state-wide ready to learn result and the 1992 grade eight mathematics result.

FIGURE 3.14 - GRADE 8 MATH SCORES ON THE THIRD INTERNATIONAL MATHEMATICS AND SCIENCE STUDY



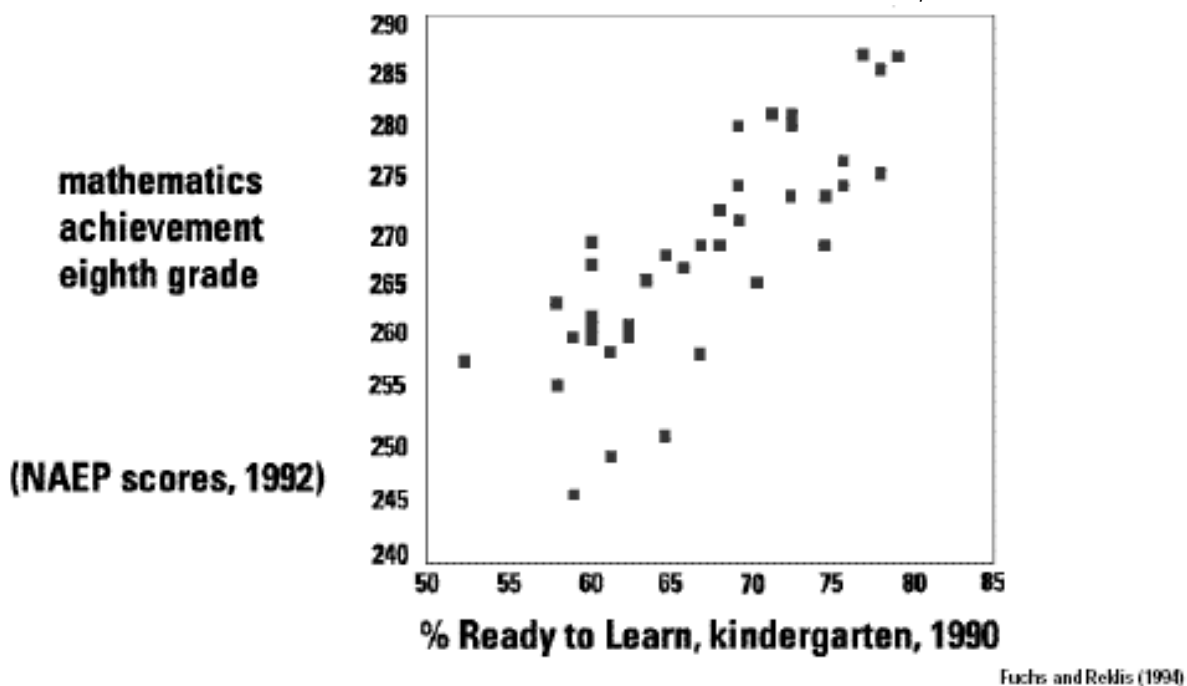
Case, Griffin and Kelly (1999)

The states with children who had a poor readiness to learn performance on entry into kindergarten did less well on the grade eight mathematics scores. (Figure 3.15) On the other hand, in states where a high percentage of children are ready to learn in kindergarten, the grade eight mathematics test results are better.

The scatter diagram shows a strong relationship* between overall percentage of children who are ready to learn in kindergarten and grade eight mathematics test results in the same state. The level of readiness for school (as assessed by the ready to learn measure) appears to have a greater effect on that state's grade eight mathematics test result than measures of school characteristics such as student/teacher ratio. Fuchs & Reklis concluded that if societies want to improve mathematics performance, investment in pre-school should be a priority.

* The correlation coefficient is .81.

FIGURE 3.15 - MATHEMATICS ACHIEVEMENT IN EIGHTH GRADE AND READINESS TO LEARN IN KINDERGARTEN USA, 41 STATES

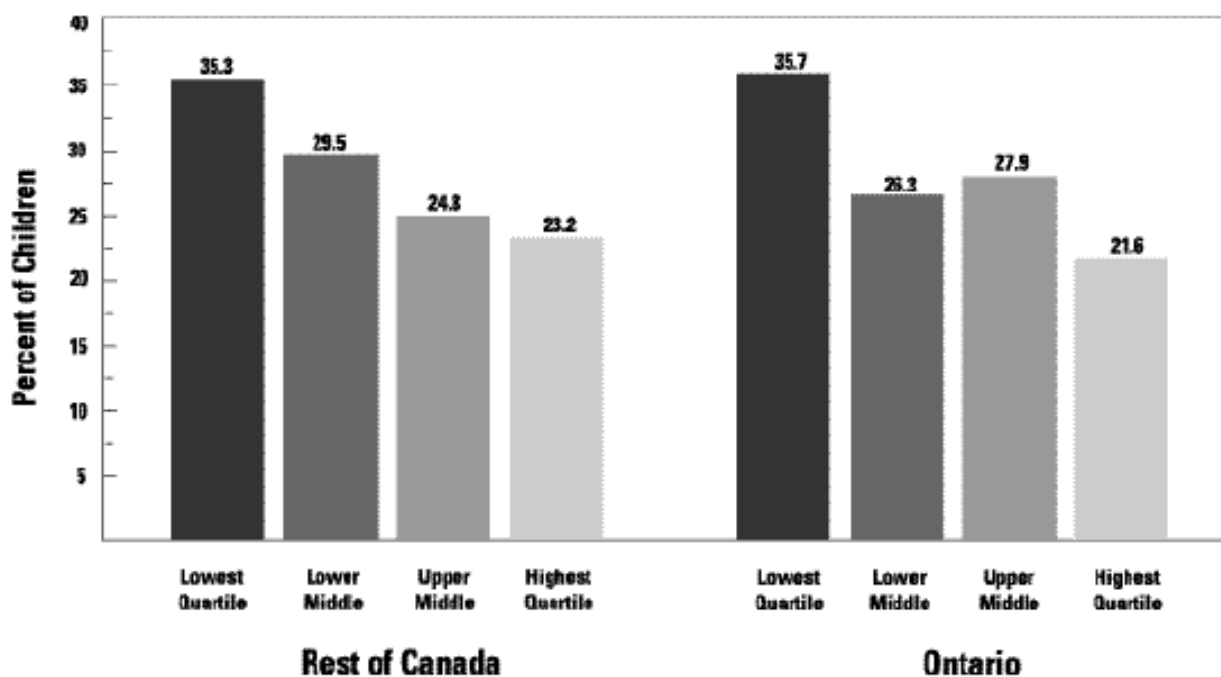


CHILDREN NOT DOING AS WELL AS THEY MIGHT AND INCOME

The results from the NLSCY allow for a cross-sectional analysis of the proportion of children who are not doing as well as they could by family income and province. The term "vulnerability" is used to describe a group of children who have a learning or behavioural difficulty which, in many instances, will not disappear on its own. Because the data are cross-sectional data, there are limits to their longer term implications. We consider that this assessment may be an indicator of the proportion of children whose outcomes could be considerably improved through good early child development and parenting programs in the early years.

Doug Willms, who is part of the team working on the National Longitudinal Survey of Children and Youth, has developed an index (a "vulnerability index"), which is based on measures of learning and behaviour at different ages.¹²⁰ The learning measure at age four to five is a low receptive vocabulary skills score on the Peabody Picture Vocabulary Test, which was given by the NLSCY to a representative sampling of children across Canada. For school-aged children, the mathematics skills test was used. A low mathematics score is one which is one and a half grades below the average level for children age six to 10 and two grades below for children age 11.

FIGURE 3.16 - THE PREVALENCE OF CHILDREN WITH DIFFICULTIES BY FAMILY INCOME
National Longitudinal Survey of Children and Youth, 1994



Willms (1999)

For the behaviour measure, the NLSCY interviewed parents to find out if their child behaved in certain ways frequently (e.g. can't sit still, worries a lot, kicks, bites, hits, etc.) Older children (10- and 11-year-olds) also answered questions about their behaviour. The behaviour component of the vulnerability index includes hyperactivity, anxiety, emotional problems, inattention, conduct disorder, physical aggression and indirect (e.g. when angry, tries to get others to dislike the person too) aggression. Based on this measurement, 19.2% of children had difficulties in terms of behaviour. This is comparable to the findings for behaviour of the Ontario Child Health Study in 1983.¹²¹

How to Read Figure 3.16

The horizontal axis represents families divided into four groups or quartiles by income. On the left side of the graph is the lowest income group and on the right side is the highest income group.

The vertical axis represents the percentage of children age 0 to 11, who are identified as being in difficulty (the vulnerability index described earlier). That is, it is the percentage of children with low achievement and/or a behaviour problem at the time of the survey.

The bars for each of the income quartiles represent the percentage of children experiencing difficulties in that income group.

Using what is described as the vulnerability index, Willms' analysis of the NLSCY data found that more than one-quarter of children in Ontario and also across Canada are not doing as well as they could.¹²² (Figure 3.16) While this finding is troublesome, it should be noted that it also means that

more than 70% of children are doing well, are achieving at average levels or better, and are not exhibiting serious behavioural problems. The other striking observation is that while the greatest proportion of children in difficulty are in the lowest income families, there are a large number not doing well who are in the more affluent families. All these results indicate it must be more than just income or poverty that is influencing the early years of child development in Ontario. What factors operate across all socio-economic groups? The proposed strategies to improve early child development should affect all socio-economic sectors. This evidence does not support the concept of targeted programs which do not benefit the majority of children. Early child development and parenting supports to enhance early development can, and should, benefit all children in all socio-economic sectors, taking into account the economic position of families and their children. (Figure 3.1 6)

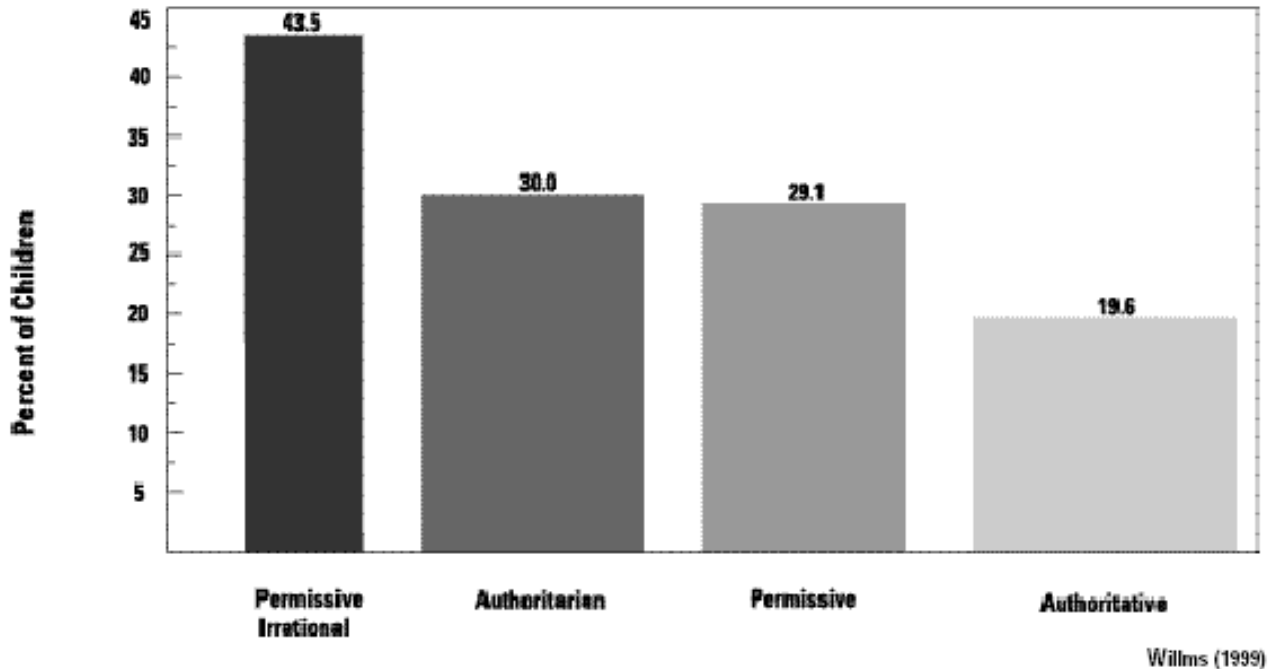
Because there is a higher proportion of children in the lowest socio-economic sector of society who are in difficulty, there is legitimate concern about the effects of low income and poverty on early child development. We know that parents with limited resources, particularly lone parents, have difficulty in providing the best circumstances for early child development. We also know from the evidence that we have reviewed that children in poor circumstances who are given access to excellent early child development centres, with parenting support and involvement, have better outcomes than children in similar circumstances who are not. The data from the NLSCY provide an opportunity to look at some of the characteristics of early child support in Canada and in Ontario. Kohen and Hertzman found that more than 60% of children before age four years do not take part in some form of early child development outside the home.¹²³ (They made the estimate on the basis of figures for regulated and unregulated day care.) Young children in families with incomes of less than \$35,000 a year who were in a program outside the home had superior vocabulary skills on the Peabody test at ages four to five. For families with incomes of \$15,000, the difference is about four points on the test. These observations are compatible with the evidence discussed in Chapter 1, that good support outside the home can help early child development, particularly for low-income families.

Parenting

We have raised the question of what factors, regardless of socio-economic status, are influencing early child development. The findings we have shown of different communities around Ontario indicate that low income is not the whole explanation. Otherwise, all the communities at the low end of the economic scale would have poorer outcomes for their children than communities at the upper end. In some cases, we found communities with a relatively high percentage of families living below the Low Income Cut-off whose children did better than children in wealthier communities. The analysis of individual child performance against the estimate of socio-economic status showed that, although there is a gradient, children in all sectors are not doing as well as they should.

FIGURE 3.17 - THE PREVALENCE OF CHILDREN WITH DIFFICULTIES
BY PARENTING STYLE

National Longitudinal Survey of Children and Youth, 1994



In the recent analysis from the second cycle of the NLSCY, it was found that while there was a gradient in behaviour against socio-economic status, the biggest effect was not level of family income, but what was described as parenting style.¹²⁴

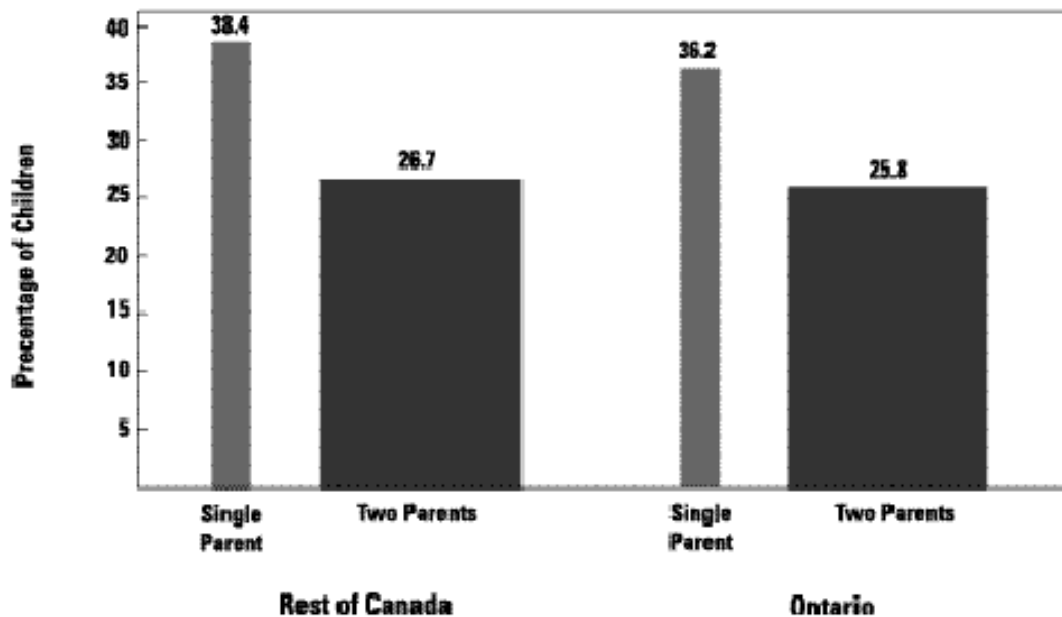
The impact of parenting on early child development is not a new concept, but there is increasing evidence of its importance. A well-recognized categorization of parenting styles or practices identified three types of parenting:¹²⁵

1. Authoritative style - warm and nurturing, sets firm limits on children's behaviour; explains rules to children and lets them participate in family decisions;
2. Authoritarian style - highly controlling, lacks warmth and responsiveness; sets unbending rules;
3. Permissive - overly nurturing; provides few standards; has extreme tolerance for misbehaviour.

These were the basis for the classification in the NLSCY study (Figure 3.17). A fourth category, permissive irrational was added.

FIGURE 3.18 - THE PREVALENCE OF CHILDREN WITH DIFFICULTIES BY FAMILY STRUCTURE

National Longitudinal Survey of Children and Youth, 1994



Wilms (1999)

Parents typically vary in their parenting approach from day to day. Chao and Wilms note that consistency of parenting is considered at least as important as these three parenting styles.⁹⁶ Their study of parenting in the NLSCY resulted in some important findings, including the following:

- ◆ Only about one-third of all parents in the national survey could be considered to have an authoritative style, considered to be the most positive parenting approach.

The breakdown was approximately as follows:

89) one-third of the parents were authoritative;

90) one-quarter were authoritarian;

91) one-quarter were permissive;

92) slightly less than 15% scored low on all aspects of positive parenting (permissive irrational).

- ◆ The analysis represented in Figure 3.17 shows that Ontario children in a good parenting structure (authoritative) had fewer difficulties than children in a poorer parenting situation (permissive-irrational).

Figure 3.18 shows the percentage of children with difficulties in Ontario in relation to family structure. It is perhaps not unexpected that single-parent family structures have a higher portion of children in difficulty. Thus the total number of children experiencing difficulties in two-parent families is much

larger than in single-parent families. The width of the bars is proportional to the number of children in single-parent and two-parent families. According to Chao and Willms:

*“These findings present a serious challenge to the “culture of poverty” thesis and the widespread belief that the children of poor families do not fare well because of the way they are parented. These findings, based on a large representative sample of Canadian families, show that positive parenting practices have important effects on childhood outcomes, but that both positive and negative parenting practices are found in rich and poor families alike. Thus, good parenting matters to everyone. The results also imply that universal programs aimed at improving all parents’ practices would be preferable to targeted programs. Because positive practices are only weakly associated with SES (socio-economic status), it is not feasible to identify parents with relatively poor skills on the basis of SES factors. Also, given that only about one third of all parents might be characterized as “authoritative”, it seems that most parents could benefit from training programs that improved their skills.”*¹²⁶

The Ontario Child Health Study, conducted in 1983, found a strong and significant relationship between behaviour and academic problems and family low-income status for children aged six to 16. Poor children were more likely to be in difficulty than wealthier children. However, there was no cut-off point - children in moderate and high family income groups also were found to have behaviour and academic difficulties, although the proportion of children with difficulties decreases each step up the family income ladder. Again, the majority of children who have problems are not poor children.¹²⁷ (Table 3.2)

TABLE 3.2 PREVALENCE OF ONE OR MORE DISORDERS ACCORDING TO FAMILY INCOME

FAMILY INCOME LEVEL	RISK OF ONE OR MORE DISORDERS (PER 100)	TOTAL CHILDREN IN INCOME CATEGORY (% OF ALL CHILDREN)	% OF TOTAL CASES OCCURRING IN INCOME CATEGORY
< \$10,000	36.3	7.3	14.5
\$10,000 - \$25,000	17.4	27.7	26.5
\$25,000 - \$50,000	16.8	52.5	48.7
> \$50,000	14.9	12.5	10.3
ALL INCOME LEVELS	18.2	100.0	100.0

Offord et al (1998)

In fact, a recent analysis of the data indicates the effect of low income is responsible for only 10% of the behavioural and academic difficulties.¹²⁸ In other words, even if child poverty were eliminated, there would only be a 10% reduction in the number of children who were experiencing difficulties.

In Chapter 1, we presented the evidence that children given good parenting and placed in quality early child development centres tend to do well even if they are in poor socio-economic circumstances. The NLSCY and other studies have found that children from families who are low on the socio-economic scale and who have access to early child development programs outside their home do better than children who do not. This finding is compatible with other studies of early child development over many years. The weight of the neuroscience evidence is that the quality of

stimulation a child receives during the critical early period has a profound effect on wiring and sculpting of the brain, setting the stage for learning, behaviour and health in the later stages of life.

Dan Keating (Human Development Program, Canadian Institute for Advanced Research) and Clyde Hertzman (Population Health Program, Canadian Institute for Advanced Research) have considered the evidence about socio-economic gradients and concluded:

“If it is the case that the distribution of developmental resources rather than strictly the distribution of wealth is crucial, this may offer one possible route toward reducing the negative effects of steep gradients that we have been discovering. It seems unlikely on the evidence that the distribution of income and the distribution of developmental resources are independent. But societies that have discovered ways of disentangling them, to the advantage of higher levels of developmental health, may provide interesting opportunities for societal learning and adaptation...”

We saw the need for an approach we came to call “biological embedding” whereby systematic differences in psychosocial/material circumstances, from conception onwards, embed themselves in human biology such that the characteristics of gradients in developmental health can be accounted for. In this sense, biological embedding is the key link between human development and health: gradients in health and well-being are therefore a function of human development and its interaction with social circumstances.” 129

Therefore, it seems logical that early child development programs should provide activities to stimulate early brain development in all young children, and at the same time, provide support (including child care) and training for parents to learn more about how to help their children learn, engage in their children's activities, and set limits on their behaviour. Support for low-income families should be designed to ensure their involvement in early child development and parenting centres.

OUTCOME MEASURES

In setting out to do this report, we were faced with a shortage of information about the early years for children in Ontario. It is interesting that the most crucial years of human development do not have a suitable database to let us know how well we are doing as families and as a society for the early years of child development. As a society we spend large sums of money measuring the performances of businesses and the economy and next to nothing on the indicators that are most crucial for our children and for the future performance of our population. In view of the importance of the early years on the future of our population which is pivotal to the success of our economy, it is time that governments closed the crucial gap in our information base.

Suitable policies for families, communities and government require outcome measures that let us all know how we are handling the early years. Outcomes of early child development are as important as school achievement measures if we are going to improve education performance in the province.

Readiness to Learn

The earliest time, given our present institutional structures, when a measurement can readily be made of development in the early years on all children is when they enter the school system. If it were feasible, given what we know about brain development, an outcome measure at age three would also be valuable. The "readiness to learn" measure assesses children's development at the time they enter the school system in five general domains:

1. Physical health and well-being;
2. Social competence;
3. Emotional maturity;
4. Language richness; and
5. General knowledge and cognitive skills.

This measure gives a useful estimate of brain development during the critical early years. It has value in relation to subsequent learning, behaviour and health for the population. Used as a population-based assessment, it will show regions or communities where early child development is not as good as it should be. It will also help a community to assess whether efforts to improve the development of children in the early years in the region has improved outcomes. It is in many ways similar to our universal measure of birthweight. Since early child development has important effects on health risks in later life, this measurement is as much a health measure as an education or learning measure. This measure could also be called a human development index.

The Centre for Studies of Children at Risk at McMaster University and the Hamilton Health Science Corporation in collaboration with colleagues across the country is piloting a readiness to learn measure in North York and some Toronto schools. The development and use of outcome measures raises the issue of labeling children. Readiness to learn measures must not be used to label children who enter the school system in relation to their peers. These measures are not meant for individual score-keeping; they are meant to tell Ontario and communities how well they are doing in supporting parenting and early child development from a population perspective.

Readiness to learn measurements must not be used to label children or used to predict performance of individual children in the education system.

Other Health Measures and an Integrated Database on Health and Human Development

Because the health of children is integral to their abilities to grow and learn, measures of health status for Ontario's children also need to be improved. In many developed countries, immunization status is viewed as a "social biopsy", meaning it is a useful test to investigate how children are doing in terms of their physical health. The monitoring of immunization rates of two-year-olds could be done through improved access to billing data in the health system (through vaccine-specific billing codes) and could become an important component of outcome measures of early child development.

Ontario already gathers data on birthweight through vital statistics. More data could be collected at this point (such as maternal education levels). Also it would be possible to distinguish between premature newborns from those who are small for their gestational age. A basic screening tool has been developed for the Healthy Babies, Healthy Children program (which is described in Chapter 4), which is filled out before the mother leaves hospital. The data from this screening could be captured and integrated into a province-wide database.

Ontario needs to structure and integrate a secure database from its records of health and human development.

Development and application of early childhood development measures should be done within an institutional structure that makes the information readily available for community and government use and for long-term research in relation to factors affecting early development and events later in life. Because the information must never be used for individual identification, it must be housed in a secure institutional setting in partnership with government, but not directly controlled by government. In Ontario, the Institute for Clinical Evaluative Sciences (ICES) and the Institute for Work and Health are examples of such institutional structures. An example of a structure with an integrated, secure database that fulfills these criteria is the Manitoba Centre for Health Policy and Evaluation (MCHPE).

Manitoba has established a population-based health information system, using the administrative data routinely collected as part of the health insurance plan.¹³⁰ This information, through agreement with Statistics Canada, can be linked to census data (socio-economic information) at the neighbourhood level and to vital statistics. This system allows for multiple cross-sectional analysis for detection of change in health status and use of the health care sector over time at a provincial and regional level. Saskatchewan is developing, and British Columbia has developed a similar capacity.

The MCHPE's Population Based Health Information System (POPULIS) links four critical sets of information at the population level:

- ◆ **Population health (ill health)** - using indicators such as premature mortality rates, life expectancy, rate of low birthweight, prevalence of disease (cancer, hypertension, diabetes, mental disorders, complications of disease, e.g. diabetes amputations); self-reported measures of health status and functional disability from population health surveys;
- ◆ **Socio-economic risk indicators** - ecologic level linked to individual by postal code: proportion of population aged 25-44 with high school or more education; births to teenage mothers; residence in low-income neighbourhoods and individual level; treaty status aboriginal; marital status, had a teenage birth; in single-headed family over time;
- ◆ **Health care use/expenditures per capita** - hospital use, nursing home use; physician visits, specialist services, immunization rates, pharmaceutical use and home care, intensive care admissions etc.
- ◆ **Supply of health care resources** - hospital beds, physicians per capita, intensive care beds, MRI etc.

The government of Manitoba and the MCHPE is now proposing to introduce the readiness to learn measure into this integrated database. They are also considering linking school performance into the file. This will be the first population-based data system that allows for the integration of measures of human development and health across the life cycle, taking into account socioeconomic factors. This is crucial if a society is to be able to assess how well its programs are improving the health and well-being of its population in all sectors of society. This general theme has been emphasized by the need for better operational and outcome measures for Canada's health care and education programs.

Introducing "readiness to learn" as an outcome measure for the early years of child development, and linking it to health records and measures of school performance, will provide better guidance on how best to assess measures to improve outcomes in early child development. For example, if the mathematics performance of Ontario's children is to improve, investment in the early years should have as great an effect (if not greater) as further investment in the school system. We need to be able to assess this if we are to make appropriate public and private sector investments.

OVERVIEW OF THE PERFORMANCE OF ONTARIO'S CHILDREN

In summary, what we can say about the performance of Ontario's children on a number of different indicators are the following: Relative to the rest of Canada, Ontario's four to five year olds perform more poorly on their receptive vocabulary skills, especially middle and upper-income groups.

1. Relative to the rest of Canada, Ontario's youth (six to eleven year old children) perform more poorly on mathematics achievement scores.
2. Relative to the rest of Canada, Ontario's children are slightly better off in terms of the number of them with a low birthweight, especially in the middle and upper-income groups.
3. Similarly, parents in Ontario are reporting fewer behavioural problems among their children aged two to five years relative to the rest of Canada.
4. Within Ontario communities, there is wide variation between socio-economic status and the proportion of children with low birthweight, low mathematics achievement, low reading achievement and low writing achievement. That is, within Ontario, some communities are performing better on all of these measures than their average socio-economic status would predict, and some communities are performing worse than their socio-economic status would predict. This suggests that something is occurring within these communities which is either helping children to do better or predisposing them to do more poorly than their socio-economic position would suggest. This is an area that warrants much more detailed investigation and monitoring.
5. What is suggested by these various indicators is that any given measure of children within Canada shows great variation. In relation to the rest of Canada, Ontario shows, depending on the measure, poorer and better performance than that in other provinces. In focusing our efforts on pre-school and the early years, we believe a number of these indicators can be improved with time. Indeed, a number of school-aged performance measures are very sensitive to pre-school readiness to learn (as economist Vic Fuchs notes) and early years enrichment.

It is also essential that Ontario have an institutional capability to track and monitor the performance of our children, especially from the pre-school years through subsequent school years on a variety of educational and non-education outcomes in later childhood and adolescence, and adult life. We will need this capability to track pre-school readiness to learn, community by community; to track the effects of this early performance on school achievement; and, to track the relationship between early years experience and a variety of other social and health outcomes in later childhood, and adulthood.

IN CONCLUSION:

- ◆ The evidence we have presented on the early years of child development shows that Ontario can do better. The steps that can improve outcomes are clear about what we can do to improve performance in all sectors of society.
- ◆ The evidence we have been able to obtain shows that there are significant numbers of children whose performance can be improved across the socio-economic spectrum. Therefore, children from all socio-economic levels can benefit from programs in early child development and parenting.
- ◆ Parenting was identified as a key factor in early child development for families at all socio-economic levels. Supportive initiatives for parents should begin as early as possible from the time of conception with programs of parent support and education.
- ◆ Ontario's approach to early child development should be universal in the sense that programs should be available and accessible to all families who choose to take part. There should be equal opportunity for participation, and all children should have equal opportunity for optimal development. Targeted programs that reach only children at risk in the lower socio-economic group will miss a very large number of children and families in need of support in all socio-economic sectors of society. We are not using the term universal to mean government mandated and funded programs. We mean community initiatives to create the necessary child development centres and parenting support taking into account cultural, linguistic, religious and other characteristics that are important for families in the early period of child development.
- ◆ Children ensure a society goes on and the quality of that society. Societies and governments have an obligation to the future to devise systems that ensure effective parenting, support good early child development, and take into account socio-economic factors associated with a changing economy and the increasing participation of women in the labour force.
- ◆ Ontario should have a province-wide monitoring system to tell us how our children are doing at school entry and at earlier stages where feasible. A "readiness to learn" measure (brain development in the first five years) will enable communities and governments to define areas of need and ascertain whether action to improve and expand early child development initiatives is making a positive difference. It must be emphasized that this is NOT an individual measure and can not be used to label or group children by their ability. As well, improved monitoring of immunization at age two will provide a measure of health status and should be included, as well as birthweight, in a new early child development outcome strategy.



CHAPTER 4

THE MISMATCH OF OPPORTUNITY AND INVESTMENT

What early years programs are offered in Ontario? Who has responsibility for early years programs? How much does the provincial government invest in early child development? What support do we give to parents in respect to the early years? In this chapter, we discuss the types of programs that exist currently, the investment the Province makes, and who is responsible for what. We also describe some initiatives in other jurisdictions. We begin with a brief description of an initiative that supports early child development and parenting from an Ontario perspective.

A Place to Grow

Sylvia was pregnant when she emigrated from China to Canada with her two-year-old daughter. Her husband was to follow later. One of the people who lived in the same apartment complex told Sylvia about the Parenting and Family Literary Centre, run by the Toronto District School Board, located in the local school. (The Parenting and Family Literacy Centres engage parents and children in play-based learning and provide parenting support, education and courses.)

They found the centre to be a warm and welcoming place, with parents, other caregivers like grandparents, and young children engaged in activities that help young minds develop through play. There was music and story-telling and games and snacks. At the centre, Sylvia's little girl found other children who spoke Cantonese, and Sylvia found toys and books in their language to take home. Both of them started to learn English. The centre showed Sylvia how to make toys from ordinary household objects. She learned the importance of reading to her toddler. They made friends.

When her second child was born, she went to the hospital with the parent worker from the centre and one of the other mothers, who acted as her birth coach. There was a celebration when Sylvia returned to the centre a few days later with her new baby. "The centre is a place where I can be me," says Sylvia. She credits the centre with helping to raise her children, and putting her in touch with other community resources. By the time Sylvia's husband arrived in this country, the parenting centre had become his family's second home.

I There are 34 of these centres in downtown Toronto schools. They include many features of early child development and parenting centres including opportunities for children's problem-based play with each other, family literacy and numeracy, multilingual book lending library and toy lending library, community readers, kindergarten volunteer training, community resource information and referral, computer training, nutritious snacks and a clothing exchange. Each of the centres takes into account the characteristics of its local community and is respectful of the many racial, linguistic and cultural traditions of families and neighbourhoods in Toronto. There is a close relationship with the 'host' school, and some parents receive training to become volunteers in early child development activities including kindergarten programs.

The participants in the parenting centres also like to show their appreciation. A group of grandmothers in one school decided to provide fresh popcorn for the school children in the afternoons, as their way of saying thank you. Parents whose children attend the parenting and family literacy centres often become active volunteers in support of their parenting centre and their school.

The Parenting and Family Literacy Centres offered by the Toronto District Board of Education exemplify a community-based initiative making use of existing institutional structures (the schools) to improve early child development sensitive to linguistic and ethno-cultural backgrounds of families. The development of this initiative was created by a leader without authority in the education hierarchy - an example of leadership without position (a form of social entrepreneurship).

WHAT PROGRAMS SUPPORT THE EARLY YEARS?

Because the critical periods of early child development pass so quickly (as every parent knows), there is real urgency to reach the families of young children before this rich opportunity for supporting optimal early development is over for these youngsters. Every year, as 150,000 new babies are born in Ontario, approximately that many (plus children immigrating to Ontario) turn six and enter grade one.

The following is a very brief listing of current activities that are potential components of early child development and parenting programs for children up to age six and their families. It is not meant to provide a comprehensive description of what each program does. We are using the word "program" in a very generic sense - as in an activity or service that is provided for this age group of children. Several of the programs listed below are not exclusive to the early years (e.g. child welfare or public health). In addition, some programs that are listed, such as children's mental health centres, do not fit neatly into any category because different services are provided under different legislation and funding.

The list covers the following:

1. Kindergarten, which is the only program provided across Ontario for all children under six;
2. Child care, which many families use in communities across Ontario, but which is not part of a universal system available to everyone, like kindergarten;
3. Family support and other early child development programs, many of which are targeted to families in at-risk neighbourhoods;
4. Early identification and intervention programs for children and/or their families who have special needs or who are having difficulties or who are considered to be at risk; and
5. Other services-specialized services including mental health services and child welfare; public health; medical services.

Figure 4.1, Sources of Stimulation for Early Brain and Child Development, identifies the components of early child development and parenting that exist now. The chart shows the balance between the parent emphasis (parent-oriented) and child emphasis (child-oriented) on brain stimulation and child development during the early years. The development of the brain is most intensive during the very early years. From conception to about one and a half years, the crucial stimulation during this period comes from the parents, particularly mothers during the period from conception to six or eight months of age. Therefore, this figure shows that brain development during this period is dominated by parenting. It is referred to in the chart as parent-oriented. By age one and a half years (toddler stage) children have started to develop through social and play-based interactions with

other children. This period of early brain development is still driven by the quality of stimulation from parents (children spend most of their time with parents), but now the interactive stimulation provided by play with other children and early educators is an important driver of brain development and has a large influence on the development of core capability of the brain in literacy and language, numeracy, behaviour, emotional control and social skills. We have described this period of early child development as child-oriented in the chart.

The initiatives listed as programs can influence early child development. They constitute components that are largely separated and fragmented from each other.

Figure 4.1 also shows other services that support the early years period, incentives for early child development (such as maternity and parental leave, child care supplements and tax credits) and that we have few outcome measures.

Kindergarten, public health, health care, and newborn screening are in bold in the chart because these are the only initiatives to involve most of Ontario's children.

The components of early child development and parenting that exist now are:

1. The one program that is available to all five-year-olds wherever they live in Ontario is senior kindergarten. All 72 school boards are required to provide it. Attendance is voluntary, and most parents send their children - 95% of all five-year-olds attend senior kindergarten. Junior kindergarten for four-year-olds is discretionary for school boards. However, in September 1998, 66 of the 72 District School Boards offered junior kindergarten, and two boards offered some junior kindergarten and some alternative early learning programs. Only four District School Boards did not offer either junior kindergarten or an early learning program.

Through senior and junior kindergarten, the school system serves about 330,000 children (190,000 children in senior kindergarten and 140,000 in junior kindergarten). Most of the senior kindergarten programs and almost all of the junior kindergarten's are half-day or alternate-day. Parents who work outside the home still have to find another program for their children the rest of the time.

These programs begin late (age 3.8 years and later) in the early child development period and miss what increasingly appears to be the most critical period from conception to age four.

2. Child care is the other early years program, in addition to kindergarten, that serves a significant number of children up to age six and can begin in early infancy. Child care, which includes nursery school, is a broad category with a mixture of public and private funding and service delivery. Unlike kindergarten, it is not established as a publicly-funded program open to all families with young children at a certain age. Parents are pretty much on their own when it comes to making child care arrangements. It depends on what is available in their neighbourhood, the specific needs of the family, and how much they can afford to spend on fees for child care.

FIGURE 4.1 SOURCES OF STIMULATION FOR EARLY BRAIN AND CHILD DEVELOPMENT



Programs Influencing Early Brain and Child Development

Junior & Senior Kindergarten

Child Care Centres, Nursery Schools, Family Child Care

Family Resource Programs/ Child Care Resource Programs/ Parenting & Family Literacy Programs

Preschool Drop-in, Recreation & Arts Programs, Children's Library Programs

Community Action Programs for Children

Better Beginnings, Better Futures

Pre/perinatal Support

Healthy Babies, Healthy Children

Early Intervention Programs

Services

Specialized Services for Young Children & Families

Public Health

Health Care Services

Incentives to Support Early Child Development & Parenting

Maternity/Parental Leave

Child Care Supplement for Working Parents

Workplace Child Care Tax Credit

Outcome Measures

Birthweight/
Newborn Screening

National Longitudinal Survey of Children & Youth

Regulated child care, either in a child care centre or nursery school or in a regulated home child care program, serves an estimated 105,000 of the 900,000 Ontario children under six. There is provincial/municipal funding to subsidize approximately 55,000 of those child care places for low-income families and special needs children. Eligibility for subsidy varies by municipality. The availability of subsidized child care spaces depends on the community; some have long waiting lists, while others are reasonably well supplied with places. There is also a provincial wage subsidy for child care staff in some regulated settings.

Parent co-operative child care and nursery school programs are regulated programs that are usually set up by a group of parents in a neighbourhood, a community, or a workplace. Together, parents make decisions and parents (or another family member) volunteer some of their time to the co-op. Usually volunteer participation involves parents working with the children (including their own child) alongside staff members for a few hours each week. Parent participation reduces the overall staffing costs, and increases the numbers of adults who are available to respond to the children, and influences parenting.

Regulated child care represents only a small portion of child care arrangements that parents make. Some, but not all, of these programs provide high quality early child development programs. Only about 10% of Ontario children under six are in a regulated setting, but between age four and six, more than 85% are in junior and senior kindergarten programs. Where are all the other children, particularly those under four years? A few may participate in other types of early childhood and parenting programs (which are described in the following section). They are at home with a parent, who may or may not be receiving maternity or parental leave benefits. They may be in unregulated care arrangements at home with another caregiver, such as a grandparent or a nanny or in somebody else's home, often a mother who takes in other children to care for along with her own. These other care arrangements may be good, bad or mediocre - we don't know.

3. Other Components of early child development and parenting cover a broad gamut of programs. Some of the most innovative community-based programs that members of the Early Years Study visited fall into this category. Many (but not all) of these programs are targeted to poor neighbourhoods. Also, many of the programs are family resource programs, which offer multi-service, community-based programs for young children, their parents and other caregivers. It is difficult to estimate how many children and families are served by these programs. There are stories in this report that illustrate the kind of impact that these programs can have.

Examples of these programs include:

- 93) Better Beginnings, Better Futures is a holistic, integrated provincial program in eight communities, chosen as high-risk for good early child development and parenting mainly because of economic disadvantage and high risk families. Child-focused and parent- focused components include parenting supports and education, nutrition, play groups, home visiting, and resources. Community focused initiatives include neighbourhood safety and enhancement activities and advocacy. The initial five year demonstration project is now complete and extensive data collected on children, family and community outcomes will be available in the fall of 1999. The children involved will be monitored as part of a 25-year longitudinal research study.

-
- 94) Parenting and Family Literacy Centres are located in 34 downtown Toronto schools, funded and operated by the Toronto District Board of Education. They teach parents about early child development, and show them how to support their children's development at home. They use a train-the-trainer model to instruct parents in family literacy and numeracy. They provide a place for mothers to be with their children and other parents, gain skills, learn about resources and share those skills with others. They provide early child development programs through opportunities for play-based problem-solving. This initiative has many components of an early child development and parenting centre.
- 95) Community Action Program for Children (CAPC) is a federal initiative funding more than 70 projects for high risk families in poor communities in Ontario. Priorities are child nutrition and preventing child abuse. Program components include family resource programs, and parenting and family literacy, nutrition activities and home visiting.
- 96) Aboriginal Head Start is a federally-funded pre-school program for young Aboriginal children. There are eight programs in Ontario.
- 97) Child Care Resource Programs are family resource programs began primarily as support to non-parental caregivers, but they also provide support to parents and other family members. Some offer support and resources to other early child development programs. There are about 185 of them across Ontario, funded through provincial/municipal child care budgets.
- 98) Public health units offer pre- and postnatal information and support programs.
- 99) Canada Prenatal Nutrition Program is a federal program that funds community projects to improve birth outcomes through nutrition.
- 100) Best Start: Community Action for Healthy Babies is a provincial health demonstration project focused on maternal-newborn health in Barrie and Algoma.
- 101) Other family support and early child development programs are run and funded by a range of organizations and agencies, the YMCA, Boys and Girls Clubs, Performers for Literacy and others, and funded through a variety of sources.
- 102) There are more than 40 community health centres across Ontario. These centres often serve low-income neighbourhoods. Health centres and such organizations as La Leche provide care and support around pregnancy and early development of the child. Some hospitals also do outreach in the community to support mother and infants.
- 103) Culture and recreation is another whole area of programming that often involves parents and children up to age six participating in activities together. Many local libraries, for example, have programs such as story times and other literacy activities for parents and small children. Recreation programs, such as moms and tots swimming programs, are often run by municipal recreation departments or organizations like the YMCA. Municipal arts and recreation programs are locally operated and funded so what is available to young children and what it costs depends on the municipality (many charge fees).

Ī Family literacy programs teach parents the value of reading together with their children. They support and promote parents' and young children's joint understanding and use of print materials and teach parents to be learning and reading partners with their children from infancy on. Parents learn that talking, singing and reading to an infant enhance understanding and use of language which sets the base of literacy learning. Formal storytimes and informal reading times promote the understanding of narrative and the rhythms and sounds of language. Family literacy initiatives are offered within many of Ontario's early child development and parenting programs. One approach to family literacy are Mother Goose programs, found in many family resource programs, and other family support programs. Mother Goose teaches rhymes, songs and storytelling techniques to young children and parents and other caregivers. Parents learn rhymes, songs and fingerplays (finger and body actions to illustrates rhymes and songs) while holding, touching and bouncing their children.

The Canadian Performers for Literacy group runs reading programs for children in places like shopping malls, schools, libraries, and parks.

The Reading Shows, using live performers, show children how reading can be fun. Read It Again!, is a family literacy program on television featuring top-quality children's literature and well-known Canadian performers.

Performers for Literacy is just one example of how we can mobilize resources from many parts of society to create a true culture of literacy... literacy is more than reading. Literacy is an investment with a huge return in all parts of our society. Because of this, creating a literate society is everyone's job.¹³¹

4. Early identification and intervention includes programs that are available province-wide for families and young children who have special needs or who are having difficulties or who are considered to be at risk. These specialized programs do not touch all children; in some programs, there are waiting lists for service.

Examples of early identification and intervention programs are:

- 104) All infants are now screened, through a province-wide program called Healthy Babies, Healthy Children. The point of contact is brief; most mothers only spend 24 hours in hospital. The program tries to identify families who are considered to be at serious risk and provide intensive home visiting until the baby is two to help prevent problems and promote good early development. Because this is a new program, it is still under development. Investment by the provincial government is being phased in. At this point, the screening part of the program touches everyone, but the support it provides to families is very targeted. Only 6% of families are expected to receive home visiting. As the program evolves, however, it may provide a base from which to build further involvement of parents and their children in early child development and parenting centres.
- 105) Prevention and early intervention programs are offered by some children's mental health centres through centre-based programming and outreach teams that work in family resource centres and other locations. The programs are primarily focused on children who already have mental health problems. These initiatives attempt to link specialized mental health services to other early years programs.

The Growing Together Project is a prevention and early intervention program operating in downtown Toronto. It is jointly sponsored by the Hincks-Dellcrest Centre for Children's Mental Health and the Toronto Department of Public Health. Growing Together provides an integrated set of services that are particularly valuable to very high risk families.

- 106) A new province-wide Pre-school Speech and Language Program is designed to try to catch and address speech and language problems before the age of four.
- 107) The Infant and Family Development Program provides support for families with children with special developmental needs up to age three. There are other provincial services, such as family respite, assistive devices, and other services and supports for children with physical or developmental disabilities and their families.
5. Specialized children and family services, public health services and the health care system support young children and their families.
- 108) Children's Mental Health Centres, developmental services, provincial schools for children who are hearing or visually impaired, and other child and family treatment programs provide treatments and supports to children with special needs and their families. These programs span across provincial health, community and social services and education jurisdictions.
- 109) Children's Aid Societies provide child protection services across Ontario. Child welfare is a legislated, mandatory service: it must be available for every community. Children's Aid Societies are legal parents of about 2,600 children who are in care.
- 110) The 37 Units for Public Health across Ontario provide programs to support healthy pregnancies, including public education and promotion of healthy workplaces. The Health Units have a goal of reducing the rate of low birthweight. Public health also conducts immunization programs, and administers the Healthy Babies, Healthy Children program locally.
- 111) Medical Services are provided through the publicly-funded health care plan. Basic prenatal and postnatal medical care is available to all pregnant women and their babies through the publicly-funded health care system. There is a newborn laboratory screening program for the detection of congenital hypothyroidism and phenylketonuria (PKU). Physicians provide neonatal services, well-baby checkups and give immunizations against several major childhood illnesses.

Through our review of what programs exist to support the early years, we concluded:

- There are innovative programs in operation, but there is no real "system" or network of services and supports available and accessible to all families with young children in all socio-economic groups across Ontario. There is a patchwork.
- The only publicly-funded program available to all parents and children in the pre-school years in Ontario is senior kindergarten. It affects only the later period of early child development which is past many of the critical periods for brain development.

-
- We have no way of telling what kind of quality early child development most Ontario children are experiencing. Some kindergarten, child care and other early child development programs do provide play-based problem-solving opportunities with other children (a key component of early child development). Some support parenting capacity. What we do know is that:
 - A significant proportion of children from all income groups in Ontario are not doing as well as they could; and n Good early child development programs and parenting can improve children's chances to develop to their highest potential.
 - Many early years programs are targeted to specific communities/neighbourhoods or income levels or they provide clinical services to children and families who are in difficulty. Targeted and clinical programs do not touch a broad spectrum of families, but they are absolutely essential for the children who need them, either for protection, treatment, family respite or other support services. They tend to work best within a system of supports available to all families.
 - Putting intensive supports into high-need areas makes good sense but our evidence indicates the need is significant in all social groups. The question is: If most parents need some kind of support to ensure their children get the best start in life in the pre-school years, what is the basic level of support for early child development that should be available in communities for all families?

INCENTIVES FOR EARLY CHILD DEVELOPMENT

We also gathered material on economic incentives and income support programs specifically for the early years. They are listed below.

1. **Maternity/Parental Leave Benefits** are provided through federal Employment Insurance up to a maximum of 55% of salary or \$413 a week, after a two-week unpaid waiting period. Maternity benefits are paid for 15 weeks to the mother; another 10 weeks are paid to either parent. An additional five weeks are provided if the infant has special care requirements. Some employers provide longer leave periods and top up benefits. The benefits are available to workers who meet EI eligibility criteria. Job protection for Ontario workers, guaranteed through provincial employment standards law, covers 17 weeks for maternity leave and 18 weeks for parental leave. This program is of crucial importance for working parents during the critical early period of child development .
2. **Ontario Child Care Supplement for Working Families** is available to low-to-middle-income families and provides up to \$1,020 per year per child under age seven. It covers situations where parents are in the workforce, where parents are attending school or getting training and have child care expenses, or where one parent is staying home with children under seven.

It is estimated that more than 210,000 families with as many as 350,000 children could benefit. Families on social assistance may qualify if they pay child care fees. Applications for the supplement were sent out in the fall of 1998.
3. **Ontario Workplace Child Care Tax Deduction** gives businesses a 30% tax deduction for the capital cost of building or expanding on-site child care facilities or for contributions to

facilities in the community that care for the children of working parents. This incentive was introduced in the 1998 Budget. This is an interesting private sector incentive.

4. **Canada Child Tax Benefit** merges the Child Tax Benefit and the Working Income Supplement and is to be the foundation for a new National Child Benefits system. Maximum benefits are paid to all families with children and annual incomes below \$20,921 (benefits are \$1,625 for families with one child, \$3,050 for two children, \$4,475 for three, and \$5,900 for four children). This benefit goes to all families regardless of the source of their income, but it is deducted from welfare payments by the provincial government.
5. **Child Care Expense Deduction** allows families to claim a federal tax deduction for child care costs for children up to age 16 or for older children if they require long-term care. Parents can claim if they required child care because of work, education or training. Receipts are required. The value of this deduction depends on the parent's tax bracket.

Based on what we learned about these incentives, we note that:

- i. Maternity/parental leave benefits have limitations. People who do not pay into the EI fund are not eligible. The two-week waiting period before benefits start is a hardship for many families, particularly those earning low incomes. Some low-income working mothers who qualify for EI can't afford to take the leave because it is based on a percentage of earnings and they already have low earnings. Adoptive parents can receive parental and special care benefits only. In the National Longitudinal Survey of Children and Youth, mothers reported that pressure to return to work was a principle reason influencing their decision to stop breastfeeding.⁵¹
- ii. Despite the tax benefits and deductions that are in place, finding affordable, high quality child care is a major problem for many working parents.

A TANGLE OF ROLES AND RESPONSIBILITIES

It is only recently that we have learned how critical early brain development is in child development and for later stages of life. Thus Ontario, like many jurisdictions in the Western world, has a patchwork of programs and supports for early childhood - rather than a coordinated system - when one looks at who has responsibility for what. There are examples of recent provincial and local initiatives which attempt to improve supports for young children and their families. Provincial programs for the early years operate under a number of legislative and regulatory frameworks and administrative structures. Funds flow from different levels of government and different branches within the same government. Moreover, roles and responsibilities are in flux because of public sector restructuring.

Positive Efforts

There are now moves to create more integrated services for families and children in the early years. There are provincial and local efforts at improving coordination of planning and increasing collaboration around delivery of services for children in the early years. There is clearly a thrust to foster collaboration and integration within the government's human services envelopes (health, social services, education, recreation). This effort is being made as government moves increasingly

out of the role of deliverer of services, while retaining control over policies and standards and continuing to play a role in funding.

The creation in 1997 of the role of a Minister Responsible for Children is viewed by many community groups and provincial children's organizations as a long overdue step. The government appointed a Minister to give children's issues a higher profile within government to help with the development and integration of programs relevant to children, to raise awareness among the public, and build partnerships in communities. However, we also heard concerns that a Minister for Children must have sufficient political responsibility and resources to be effective in what is emerging as one of the important portfolios in government. The current office is "Without Portfolio", which means that it has no direct responsibilities for funding or programs. However, it does review relevant proposed government policies and initiatives from all departments to monitor the possible impact on children. The Minister has a Children's Secretariat reporting to her.

The Minister and the Children's Secretariat operate separately from the Office of Integrated Services for Children. The Office of Integrated Services for Children was established about two years ago to enhance collaboration in children's services. It is accountable to the Ministries of Health, Community and Social Services, Education and Training, and Citizenship, Culture and Recreation. This Office has a direct impact on programming.

It provided the provincial policy and implementation lead for Healthy Babies, Healthy Children program. It also provides provincial direction for the Pre-school Speech and Language Program and the Integrated Services for Northern Children initiative. It manages the evaluation of the Better Beginnings, Better Futures project.

The Healthy Babies program is a major new investment in prevention and early intervention by the province. Funding will increase to \$50 million a year when it is fully implemented. Because Healthy Babies touches all newborns and mothers; there is potential for this program to be a way for parents to receive valuable information and guidance to centres providing early child development programs and parenting support.

There has been a real effort to have Healthy Babies link into existing services in communities, through local Public Health Units that are already involved in prenatal and perinatal services. There has also been collaboration in development of the program. For example, the assessment tool that is being used by Healthy Babies was developed in consultation with Children's Aid Societies, which are using a new, province-wide risk assessment tool for child abuse. However, what is a positive step in terms of cross-system collaboration has also raised concerns in some communities about the potential to stigmatize families who are singled out through the Healthy Babies assessment.

In addition, the province has provided the Better Beginnings program with long-term funding, launched a new Pre-school Speech and Language Program, and implemented the new Ontario Child Care Supplement for Working Families and Ontario Workplace Child Care Tax Deduction.

Service Silos

Most of the programs to support the early years were developed to help families and children in difficulties. Ontario has what are commonly known as service "silos" in government. Community service providers and children's services organizations concerned about the early years have been

lamenting for years about the barriers within and among sectors like health care, education and social services. Government itself is struggling with how to cope with this issue.

Child care and kindergarten are two obvious examples of the legislative, policy and administrative divide between different services in early child development.

Kindergarten programs are offered by district school boards under provisions of the Education Act. Program guidelines are provided by the Ontario Ministry of Education and Training. Since the "Who Does What" realignment of provincial-local roles, the Province is responsible for funding of the school system.

Child care programs are offered by an array of public, non-profit and commercial providers in communities. They operate under the Day Nurseries Act. The Ontario Ministry of Community and Social Services licenses child care centres. Child care subsidies are jointly funded by the province (80%) and municipalities (20%). Under the "Who Does What" reforms, municipalities are assuming greater responsibility for child care. For example, the wage subsidies, previously funded by the province, must now be cost-shared with municipalities.

The gap between the school system and the child care system is more complicated still. There is a professional hurdle between relatively well-paid teachers, with a specific set of qualifications, and relatively low-paid early childhood educators with another set of qualifications. Teacher-pupil ratios in the schools are higher than adult-child ratios in regulated child care. The provincial kindergarten program guidelines may also skew that program (inappropriately, we believe) towards a more didactic, rather than a play-based, problem-solving, developmental, approach.

But kindergarten and child care are only part of the patchwork. Child care resource centres previously funded and administered by the Ontario Ministry of Community and Social Services, are now to be cost-shared 80% by the province and 20% by municipalities and will be administered by municipalities. Specialized children's services are governed by the Child and Family Services Act, with different delivery agents in the community. Child welfare, for example, is delivered by Children's Aid Societies, which used to be cost-shared with municipalities, but are now funded by the Ministry of Community and Social Services (under "Who Does What").

Specialized services for children and families with special needs are in the midst of a new provincially-led reorganization called Making Services Work for People. One of the priorities in the new policy framework is early intervention/prevention services for children under six. While Making Services Work for People has a laudable goal of greater collaboration among service providers and easier access for parents, it is limited by its service silo, which separates it from education, health and even child care, which is part of the same Ministry of Community and Social Services. Because of this, it is difficult for its focus to be on a seamless concept of early child development.

Health care services come under their own set of legislation/regulations. Physicians are reimbursed for their treatment services for pregnant women, mothers and their young children through the provincial health care plan. Medical services are not necessarily linked into any other social supports for pregnant women and new mothers and their children.

Municipalities are assuming the costs of Public Health Units under the "Who Does What" reforms. Public Health Units provide prenatal/perinatal and other parenting support programs. The Healthy Babies, Healthy Children initiative, which is being implemented across the province by Public

Health Units, is fully funded by the Ontario Ministry of Health. However, other components of early child development and parenting are delivered by municipalities, which are responsible for public libraries, parks and community recreation programs. Libraries and parks and recreation operate outside the provincial legislative frameworks for child care, public health, child and family services and education. In some regions of the province, these programs are run by a different level of municipal government than components of early child development or public health.

There are also federal programs and initiatives and programs supported by foundations and community organizations, that operate outside of provincial legislative or policy frameworks.

The province has a variety of legislated programs, funding sources, institutions, and administrative structures involved in support of families in the early years.

Locus of Responsibility

If Ontario is to help weave the existing tangle of roles, responsibilities and valuable resources into a seamless fabric of supports for our youngest children and their families, there are some barriers to be overcome:

- 112) A clear locus of responsibility at the Cabinet level, for the provincial government's initiatives for early child development is needed. The struggle for many community initiatives is how to make collaboration work across the sectoral boundaries of education, health, social and arts/recreational services, when legislative authority, policies, program guidelines and funding requirements tend to belong to a variety of ministry silos. Clearly, efforts are being made within government and in communities to address this problem, but it will not be easily solved without legislative and structural change.
- 113) There should also be a locus of responsibility in communities to foster collaboration among service providers and to make it easier for parents to find the information and supports they need. That doesn't mean that one community agency has to run all the programs. But everyone should know where to go to find out about support for parenting and early child development. We heard from parents and children's services organizations that parents who don't know where to seek help, may wait too long - until what was a relatively easy problem to deal with has escalated to the point where the family is falling apart.

INVESTMENT IN THE EARLY YEARS

We have tried to estimate the investment that the province makes in programs and incentives for children up to age six. We have been assisted in this effort by the Children's Secretariat. The province's investment in the youngest children is not usually separated out from other expenditures. Therefore, in some cases, we have had to make estimates of what portion of a program affects the early years.

The provincial government is not the only funder of initiatives for children, but it is the predominant funder. The Government of Ontario spends almost \$17 billion on programs, services and supports for children up to age 18. By far the lion's share - about \$14.2 billion - is spent on the older group (age six to eighteen). Most of it is funding for the education system. About \$2.5 billion provides support to the youngest group of children (up to age six).

About \$870 million is spent on kindergarten (senior and junior) and \$1 billion on medical care, mental health services and other specialized services for young children. The province spends approximately \$650 million for early child development and parenting initiatives, apart from kindergarten programs in the education system.

It appears that each year Ontario spends approximately \$2,800 per child on the zero to six age group, compared to \$7,250 per child for those six to 18 years of age. Very little of this is spent on quality early child development initiatives for all sectors of our society. We are aware that other levels of government invest in the early years.

- 114) In 1995, Employment Insurance provided \$1.27 billion in maternity/parental and adoption benefits for Ontario parents.
- 115) The federal government is currently funding a number of initiatives for young children and their families, including the Community Action Program for Children projects in Ontario.
- 116) There is also some municipal funding for child care (20% of subsidies and wage grants), public health programs and programs such as recreation, cultural activities and libraries which may benefit young children and their parents.

Foundations and community organizations, such as the YMCA and Boys and Girls Clubs, also contribute to early child development and parenting initiatives. It was beyond the capacity of this study to analyse all the financial contributions from charitable sources such as the United Way and private foundations and businesses across Ontario, but we wish to acknowledge the importance of those contributions. For example, private foundations such as Atkinson, Laidlaw, and Lawson and United Way Agencies, have all made significant investments in programs for young children. Publicly supported foundations and non-government organizations with an interest in funding children's programs include Trillium and Invest in Kids.

Charitable organizations, such as *Voices for Children*, have worked to increase public awareness and provide public education on the vital importance of the early years. Invest in Kids, the CBC, and TV Ontario have participated in initiatives to get the message across to parents and communities.

Ī The United Way of Metro Toronto is sponsoring "Success by Six" initiatives to contribute to the development of comprehensive and coordinated services for young children and their families. Success by Six provides three-year funding to pre- and post-natal programs, family visiting programs that want to expand their services to vulnerable children and families, in collaboration with others in the community. Other United Way agencies are implementing or considering starting Success by six funding programs. The approach is designed to provide incentives for collaborative initiatives that bring together community initiatives (government and non-government organizations).

However, even counting in these additional investments, there is still a strong funding bias on behalf of programs for older children compared to the crucial early years. We can suggest a reason: as a society, we have tended to view the early years as the sole responsibility of parents. The emphasis has been on families with special needs, whether the needs were because of the birth of a developmentally or physically disabled child or because of circumstances that impoverish or endanger a child's healthy development. We must continue to provide those services.

But we should recognize that all parents with young children in today's world need some supports in view of our changing society and socio-economic circumstances, and those supports for parenting will have the most impact in the first years of a child's life. The majority of women with children are in the workforce. Whether families are single-parent or two-parent, they are under what many think is increasing stress. The stresses are both economic and social. Some families are working so hard to provide for their children, they have little time and energy left to provide good parenting for their children. Some mothers are home alone with young children, isolated and depressed.

Many parents want more help and support with how to be a good parent. Regardless of whether it was appropriate in the past to put virtually all the responsibility for early child development on parents (which is arguable), it is our strong contention in today's world that it is most inappropriate now to leave parents to struggle on their own. The new understanding about brain development and the importance of the early years in the development of individual competence and coping skills reveals a clear mismatch between society's investments in the early years and the opportunity to improve the life chances of the next generation. Increased public and private support at all levels of society for early child development is required. Over time, if we front-load our investment in the early years on parenting and early child development and parenting, we may be able to reduce or delay the need for more expensive remedial services and clinical treatment in the later stages of life.

FIGURE 4.2 BRAIN DEVELOPMENT - OPPORTUNITY AND INVESTMENT
Brain's Wiring and Development

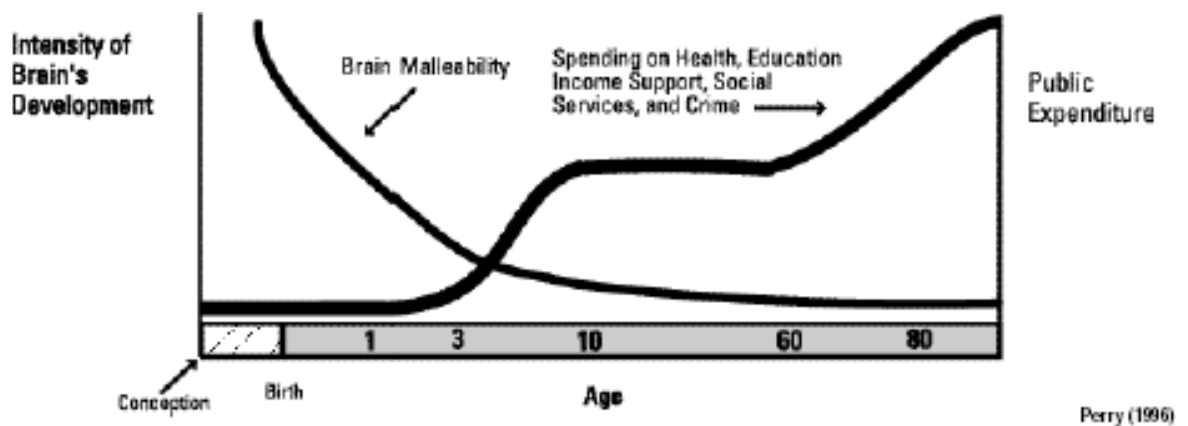


Figure 4.2 illustrates the relationship between expenditures on programs after the early years in respect to learning, behaviour problems and health throughout the life cycle against expenditures during the critical years of brain development.¹³²

EARLY CHILD DEVELOPMENT AND PARENTING INITIATIVES IN OTHER JURISDICTIONS

Early child development and parenting initiatives across Canada and throughout the world have experienced increased interest and in some regions, rapid growth and expansion over the past decade. Some of the Scandinavian countries and France began earlier. There has been an

explosion in interest and development of initiatives in the United States as a result, in part, of the new understanding of neuroscience.

Other Provinces and Territories

There are some interesting new initiatives happening across Canada. Here are three examples.

Quebec has initiated comprehensive, integrated early child development and family support programs. Early Childhood Centres are replacing child care centres and family child care agencies for children from zero to five years. In September 1997, regulated spaces for four-year olds in either centre-based programs or family child care homes became available at \$5 per day. This was extended to three-year-olds in September 1998, and will continue to be extended incrementally until the year 2001, when all age groups from zero to five will be covered. Out-of-school care (available to children in kindergarten as well as primary schools) is also available at \$5.00 per day.

Prince Edward Island has innovative collaborative frameworks for early years initiatives. The federal CAPC program has created family resource programs in each of the five health regions and one in the MicMac Family Resource Centre in Charlottetown. The programs are open to all children aged zero to six and their families - they are not targeted to low income or at-risk populations. One of the family resource programs, C.H.A.N.C.E.S in Charlottetown, has spearheaded a collaborative partnership, Child Alliance, which is pulling together government and non-government groups and organizations working with young children and their families. Recent funding from the National Crime Prevention Centre will allow the Child Alliance to move forward to implement an early years outcome measure at age three. The provincial government has established an Interdepartmental Healthy Child Development Committee to develop a multiyear plan for healthy child development.

The Children and Youth Secretariat in Manitoba has begun to implement Children First: Early Start, an early intervention initiative for children aged two to five. Its delivery is based within early childhood programs, including 15 regulated child care centres which are located in high-need neighbourhoods, and have demonstrated stable enrolment and parental involvement. Early Start provides outreach to parents, including home visits, ensures active parental involvement in the program, and links families to health, education and social services information and services.

United States

The United States has fragmented early childhood programs for children before school entry, which are similar to the array found in Ontario. There are federal Head Start programs, private and non-profit child care and pre-school programs, and pre-kindergarten and kindergarten programs offered within the school system. The administration, legislation and policies are spread over different government departments within different levels of government.

But the development of early child development and parenting initiatives in the United States has gained prominence in recent years. In 1994, the Carnegie Corporation of New York released a report entitled *Starting Points: Meeting the Needs of Our Youngest Children*,⁴¹ which along with the work of the Families and Work Institute in New York has created a broad understanding of the new evidence from neuroscience research. Catalyzed by the new understanding and the leadership of the Families and Work Institute, numerous governments and non-government groups including the National Governors Association and the National Centre for Children in Poverty have joined

Carnegie in promoting an action agenda to promote responsible parenthood, guarantee quality child care choices, ensure good health and protection, and mobilize communities to support young children and families.

▲ Toward the Future

The Starting Points initiative has been defined by most of the sites as much more than simply enhancing services and policies for infants and toddlers. Rather, the site leaders have taken on the challenge of crafting and implementing new kinds of partnerships with state agencies, communities, providers, families, business leaders, the media, and the public. They have been both opportunistic and deliberate, and some initiatives have been able to accomplish more than others. But all have taken steps toward the vision of the future where infants and toddlers - indeed, all children - and their families will no longer be a quiet crisis because of the inattention of the broader society¹³³.

- 117) The Carnegie Corporation created a Starting Points grants programs for state and community initiatives to address the challenges of the action agenda. Fourteen grants were awarded to states, cities and state-city partnerships.
- 118) The Families and Work Institute marshalled together the evidence from neuroscience and prepared materials to disseminate the information. It also initiated the I Am Your Child campaign and continues to support and facilitate government, private sector and community understanding and mobilization initiatives across the United States.
- 119) As a result of these initiatives, between 1997 and 1998, 42 Governors made early childhood a key issue in their state agendas.¹³⁴
- 120) Several states have focused on developing cohesive early care and education systems, appropriate choices for parents, and dissemination of program information and evaluation. For example, Ohio provides five specific models for programs to follow in coordinating Head Start, child care, pre-school programs and public schools. In Hawaii, 1997 legislation created new funding options through a public-private partnership to help plan, coordinate and finance early childhood services for children. In Michigan, under the System Reform Initiative, directors of human services agencies and other stakeholders have formed Multi-Purpose Collaborative Bodies. Most have focused on early childhood service planning and development and have begun to assess how to organize a community system for care for all young children and their families. American governments have long supported early child development and family support initiatives targeted to low-income, disadvantaged children (for example, Head Start). There has been less public support for other young children and their families. While much of the current activity remains targeted to at-risk populations, there are indications of public policy initiatives which are much broader in scope so as to benefit all children. These initiatives tend to involve leadership by state governors and are community-based and attempt to involve government, communities, and the private sector.

European Jurisdictions

121) Many European jurisdictions have developed some form of organized early child development program for at least two or three years before compulsory schooling.¹³⁵ Also, most have some form of maternity/parental and family leave and benefits.

For Example:

122) In Sweden, new parents are entitled to leave and benefits for up to 15 months after the birth or adoption of a newborn child. High quality child care centres (which offer early child development programs) are widely available from age one until school entry at seven years. Parents pay a small fee, but the majority of the cost is publicly funded. Neighbourhood parent support centres are available in most communities.

123) France has an extensive, publicly supported network of early child development programs. The full-day pre-school programs, called *écoles maternelles* are available for 98% of all children three to five years and for about one-third of all two-year olds.

124) In Denmark, 48% of all children aged zero to three years and 82% of children aged three to six years attend publicly funded early child development programs. (There is a small fee.)

Developing Countries

125) Early child development and parenting programs, although limited, are found throughout developing countries. The recent report from the World Bank, *Investing in Our Children's Future*, documents formal and informal initiatives.¹³⁶ Many are building on the capacity of supported home-based delivery models for early child development. UNICEF has recently made early child development an important issue for its children's agenda.¹³⁷

IN CONCLUSION:

- ◆ Ontario spends a considerable amount on children. It invests about two and a half times more annually on children after they enter the school system than before. Less than a third of the expenditure on the younger age group is for programs that can be considered "universal" in terms of support for early child development and parenting and are not primarily treatment services for children with problems
- ◆ There is a long history in Ontario of provincial and community initiatives and investment in early child development. What has evolved, since most of the initiatives were started for specific problems, is a patchwork of programs primarily for treatment, rather than an integrated system of centres for early child development and parenting that are readily available and accessible to all young children and families .

-
- ◆ Since all families and children, in all socio-economic circumstances, can benefit from early child development and parenting programs, it is important that programs evolve to be available and accessible to all families in all socio-economic groups.
 - ◆ Over time, increased community-based initiatives and investment (public and private) in early child development and parenting, will pay off through a population with better competence and coping abilities for the new global economy. The provincial government has to play an important leadership role in the development of early child development initiatives and help ensure that they are sensitive to local communities. This investment will be much more cost-effective than paying for remediation later in life, such as treatment programs and support services, for problems that are rooted in poor early development.
 - ◆ Other jurisdictions in the developed (United States and Europe) and the developing world (UNICEF and World Bank) are now taking steps to support good early child development for all children in their communities.

CHAPTER 5

THE STRENGTH AND EXPERIENCE OF ONTARIO'S COMMUNITY INITIATIVES IN EARLY CHILD DEVELOPMENT PROGRAMS

This chapter discusses what we learned about initiatives in some of Ontario's communities we were able to visit. We begin with one of the stories from a successful community-based initiative.

Birth of a Butterfly

Five years ago, I would never have publicly shared my story. I didn't want people to see me. They'd see the mad-woman I was desperately trying to conquer. They'd see I was a no-good-welfare-mom-prisoner's-wife, call Children's Aid and steal my baby. Paranoia? Depends on where you've been in life. I was stressed, depressed, dealing with my past ghosts while struggling to be the Perfect Mother the books I read said I could be with no family, friends, breastfeeding or other basic parenting support.

That was our life for my son's first nine months. Then we ventured into St. Patrick's School for a Better Beginnings Playgroup. Stepping through those doors was the beginning of a transformation that still, to this day, amazes me and fills me with pride. What helped us break out of our cocoon was the Better Beginnings emporium of information and connections.

Through their connection with the Kingston Literacy's Read Write II Centre, I participated in and later facilitated a writer's group.

Through the numerous committees I volunteered on, I learned new skills, improved old ones, recognized a passion for and understanding of research, nutrition and child development. These experiences led me to reflect on my own childhood and how much of what I have experienced in life (those awful inner rages, low self-esteem, etc.) were a result of that - giving me the determination to break that negative cycle by educating myself and seeking out more supports.

Through the Family Visiting Program, I found a friend. Sue encouraged my positive parenting, helped me face my negatives. She listened to my fears, rantings (and there were many) and gave me excellent insight and information. She introduced me to other like-minded women, who gave me an even deeper sense of belonging. She became my children's friend too.

The connection with North Kingston Community Health Centre made it possible for me to see wonderful social workers who helped me learn to deal with my depression and marital woes.

Connecting with other parents and staff in parent support groups helped me feel more comfortable parenting the way that was best for my family.

By finally being active and appreciated, my confidence and self-respect soared and led to, well, a happier household, for one (because if mom's sane...). It also led me to help initiate and develop other worthy endeavours: a Parent Relief Co-op, The South Eastern Ontario Breast feeding Coalition, The Good Food Box, my infant feeding survey, child car seats in taxis and Joyceville Institution's Visitors Committee.

Better Beginnings and the Community Health Centre offered Childcare Provider and Peer Co-Facilitator Training, which led to employment as a Childcare Provider and volunteer Co-facilitator of parenting groups I once benefitted from. This in turn led to a full-time six-month contract position as BB Childcare Assistant.

All we have done with Better Beginnings, the many resources available and finally being able to depend on people, be heard and valued, helped me realize I am a Good Person, I am a Good Parent. All this helped my husband face his own ghosts and negatives as well. His sense of self, our marriage and his parenting skills have also greatly improved.

So I'm still not perfect, parenting with no family support, but I've regained my inner strength and I'm soaring like a butterfly because we have a network of support, jobs and opportunities. We wouldn't have reached this point so soon, maybe at all, without Better Beginnings paving our way.

But there are other mothers out there, be they married, single, divorced, struggling with parental stress, abuse, isolation and/or depression. And frankly, there are just too many children losing the battle. Those living in poverty are not the only ones at risk. I'm from an upper-middle class family; my material wants and needs were met with a flourish. However, my emotional and physical well-being were damaged. Had my mother - indeed had her mother - the benefits of Better Beginnings, I seriously doubt I'd have wasted a good portion of my life or needed the security of our social safety net.

1. Written by a mother involved in Better Beginnings, Better Futures in Kingston (excerpted)

The personal story above expresses much better than we could how a mobilized community, family support centre, and a collaborative network of service providers, can make all the difference in the lives of families who can benefit from support and education, regardless of their income or background. It is the kind of powerful story that can be told by people involved in community projects in Sudbury or Toronto or Windsor or Thunder Bay or London - anywhere in Ontario, in fact, where communities with community leaders have been able to come together to support early child development and parenting.

Members of the Early Years Study visited 34 initiatives at 15 different community sites across Ontario. We had gathered information on many more initiatives but only could visit a limited number because of time constraints. We tried to visit initiatives in diverse regions of the province that promote good early child development and parenting in the following ways:

- 126) Providing good advice and support in respect to nourishment, nurturing and stimulation for young children through play-based learning;

-
- 127) Providing support to parents of young children;
 - 128) Offering non-parental care (day care) which supports early child development and parenting capacity; and
 - 129) Improving the community's capacity to support good early child development programs.

There was no attempt to evaluate the programs or their practices. The sites were chosen to provide a diversity of regional, cultural and program characteristics.

In these meetings, we were struck by the strength of community leadership and community involvement. There are mothers receiving social assistance who have acquired the skills and confidence to make an important contribution to the work of community initiatives. There are grandparents who have become the backbone of support for and participation in early learning and parenting programs. There are retired business people who have given their expertise to get innovative community projects off the ground. There are foundations that have identified early child development as a priority for start-up financial support for community-based initiatives. There are community organizations that have focused interest on and committed resources to development of good models to support parenting and young children's optimal development.

In some communities the three levels of government, school boards, charitable foundations, private businesses and unions have all provided financial support to help put in place initiatives that can be part of early child development and parenting programs in communities. These are excellent examples of leadership not from authority but from the ability of communities to adapt to a challenge. This differs from governments' initiatives that are specific policies to solve a particular problem (sometimes called technical leadership).

A report based on the community visits is published separately as a working paper to this report. For this report, we have not attempted to cover everything we heard and learned. Instead, we have tried to synthesize a great deal of information and advice into some broad categories to help inform our recommendations. We also received input from a number of provincial-level organizations involved with young children and families. A report on that consultation is published as an appendix as well. We heard from a diverse group of mothers, fathers and grandparents of children aged zero to six years at a town hall meeting in the gym of an east Toronto community centre. A cross-section of their comments is included in this chapter, and a report of that discussion is part of the appendices. We also benefited from the experience around the table of members of our own Early Years Reference Group who are active in their communities on behalf of children.

Ī There is a Long History of Community - Supported Initiatives

The new brain research is expanding our understanding of the significance of early child development and it is generating interest and attention around the world. But the importance of the early years is not a "new" discovery. Many Ontario communities have supported initiatives for families with young children for a long time. And many of these initiatives have grown and flourished, based on a combination of government funding, community private and public resources, dedicated staff, and the commitment of volunteers.

The St. Mary's Family Learning Centre in Windsor, for example, opened in St. Mary's Anglican Church more than 25 years ago. The need to support families with young children was recognized by the church community, which provided financial support and space to get the initiative started in 1974. The Learning Centre also received some federal government grants.

In 1985, with provincial child care initiatives funding, St. Mary's expanded to include a drop-in centre, a toy lending library, in addition to its parent/caregiver education program. In 1987, St. Mary's moved to its current home, an empty church that was bought for the centre by the caretaker at St. Mary's Church. It offers early child development and parenting programs to young children (including opportunities for problem-based play with other children and non-parental care). It also supports mothers with young children of their own and others in the community who provide early child development programs to young children in their own homes - a "hub and spoke" strategy. Staff, parents and volunteers raised money for the necessary renovations. Programming has evolved and expanded in the new location. Over the years, the Centre has often had long waiting lists for its support groups and courses. About 400 families are registered participants, and 60 volunteers provide their time and skills.

Today, the program has expanded to include comprehensive parenting courses, a clothing exchange, and other community initiatives. Its support within the community is evidenced by its roster of volunteer support. The Centre runs walk-a-thons to raise money and awareness. Some of the community resources involved with the Centre include:

- iii. General Foods Canada donated a passenger bus;
- iv. Greater Windsor Horticultural Society helped with landscaping;
- v. Parents painted murals;
- vi. To give every family with a newborn child a fire and burn prevention kit, the Centre participated in the SAFE Newborn Project in 1994 in cooperation with Welcome Wagon, Victorian Order of Nurses; Windsor-Essex County Health Unit, Essex County Fire fighters Burn Unit Foundation, and the Essex County Fire Service Association;
- vii. Volunteers from Home Depot renovated the crafts room, and service clubs donated funds to update equipment in the drop-in.

The Centre's list of supporters include: G.M. Skilled Trades Committee, local branches of Knights of Columbus, the Royal Canadian Legion, and the Royal Bank, a number of other local service clubs, private companies, church groups, children's organizations and individuals. This is a strong early child development and parenting centre.

ONTARIO SHOULD BUILD ON EXISTING COMMUNITY STRENGTHS AND CAPACITY.

There are community-based initiatives across Ontario that are making a positive difference in the lives of young children and their parents. We have heard testimonies from parents themselves to assure us of that. Brighter Futures, Grandir Ensemble in Sudbury and district, is a community-based program for ages zero to six funded under the federal Community Action Program for Children. It has six sites offering playgroups, toy lending libraries, family resource programs, parenting education and training, community food programs and outreach. It has some 700 families and 125 volunteers. It promotes family-friendly services in rural communities where there is a demonstrated lack of services and a growing number of families with small children. They work in collaboration with the Sudbury Healthy Babies Healthy Children led by Public Health.

Here are just a few comments from parents:

"Brighter Futures (in Sudbury) practically saved me from going insane after I had my first baby. They were there when I needed support and helped me deal with my postpartum depression."

"I have learned and grown as a parent and partner with my husband through a variety of programs and workshops. When I joined, I had very few friends with children. Today, I have a network of parents and friends."

"I have been a member of Brighter Futures for two-and-a-half years and have watched it grow and succeed. Not only have I recognized the positive difference it has made in my family, but the difference it's made in the whole community."

Community capacity is not the same across the province, however. The variation in community capacity may account for some of the differences among regions presented in Chapter 3. There is much to be said in favour of local program options to allow for flexibility to meet the diverse cultural and ethnic characteristics of communities. But we must recognize that communities have different strengths, different cultures, different characteristics and different needs.

The capacity in communities includes all the public resources in the community that are or should be linked into parenting and early child development programs - schools, hospitals and other health services, social services, recreational programs, libraries, colleges and universities... and so on. It also includes private sector contributions - that can either be in-kind (volunteer time, use of facilities) or an infusion of financial support for capital or operating expenses or the establishment of early child development centres for employees with young children. There may be one-time costs to buy toys, books or equipment to set up a satellite location for a centre-based program, for example. Private sector initiatives and support can also help to spread the word about the early years story.

Communities that come together (public and private sectors) to build on their strengths also create greater social cohesion. By social cohesion, we mean the level of trust and sharing, the recognition that we are all responsible in some sense for each other, as part of the same community, and that we all share a responsibility for the next generation. There is some evidence that regions with a large measure of social cohesion tend to be stronger and better able to cope with the challenge of changing economic and social pressures.

PARENTS MUST BE A KEY PART OF EARLY CHILD DEVELOPMENT PROGRAM.

Parents have the most important influence on a child's development in the early years. That is why we are emphasizing the importance of involving parents in early child development programs. As the Vanier Institute of the Family notes:

"The care of children in Canada remains the primary responsibility and work of parents. Even in families where the children receive supplemental care while their parent(s) work or study, the children spend most of their time in the care of a parent. Moreover, it is parents who must find and organize non-parental childcare arrangements, and who are "on-call" around the clock."¹³⁸

Early child development programs facilitate the wiring and sculpting of the brain by providing stimulating play opportunities that help young children learn to problem-solve in a safe and nurturing environment. These programs must include activities such as music, art and physical activity. Some programs we saw also add the important other ingredient that we believe must be part of an early child development system-parenting support. The involvement and support of parents and families in the program is an element of quality that maximizes the effectiveness of early child development programs.

Parents not only benefit from community supports, where programs are available and accessible, but they also give back. Parent involvement is a major contributor to the success of programs in early child development. Educating parents is also one of the best means of raising awareness and increasing public understanding when they share what they learn with other parents.

In Sudbury, the *Brighter Futures* project, described earlier, asks for a membership commitment. All members commit to contributing 10 hours per year, per family, or the equivalent in a contribution of toys, equipment or money. With 700 families, that means 7,000 hours of volunteer time - a wonderful additional resource for the children. Involving parents for most community initiatives means more than asking them to visit their child in an early child development centre now and then. The story from the Kingston Better Beginnings project gives a real sense of that. The mother talks about real participation. The parental involvement component must not be given lip-service.

DAY CARE AND EARLY CHILD DEVELOPMENT IS AN IMPORTANT COMPONENT FAMILIES NEED.

We heard that all families need non-parental care for their young children. Some need regular full-time or part-time care arrangements, while others need occasional respite care. Even the community meeting with parents and grandparents who were not employed full-time outside the home identified that full-time high quality child care arrangements should be available for parents who want it for their children. But parents do not want to choose between early child development and child care. They would prefer early child development centres that include non-parental care. (Good day care based on play-based learning is an important component.)

Language can be a powerful tool in changing attitudes. We would like to change the debate from a focus on "child care" which sounds to many people like babysitting, and "kindergarten", which is associated with children sitting in regular classrooms. Good child care and kindergarten programs do not fit either stereotype - they are part of good early child development. There needs to be a better integration.

A study of public views on child care in Ontario was conducted by Ekos Research Associates in June 1997.¹³⁹ The findings reported that "child care" as a label, tested poorly in both the survey and the focus groups, while "early childhood education" was well received, even when the same types of activities were involved. We use the term "early child development" to embrace functions provided by day care and kindergarten.

There are some private sector initiatives that we met with that could be defined as being early child development and parenting centres. These could be an important base for building increased private sector involvement. The sector could work with business to help establish and operate early child development centres as part of the workplace.

ONTARIO AND ITS COMMUNITIES CAN AND SHOULD MAKE BETTER USE OF EXISTING PUBLIC RESOURCES AND FACILITIES, ESPECIALLY SCHOOLS, FOR EARLY CHILD DEVELOPMENT.

The community groups gave a set of messages that were fairly consistent. They emphasized the importance of using existing resources and facilities in communities, such as school space, for parents and young children. Taxpayers have already paid for these facilities. They should be used to their maximum potential for the benefit of the community. Locating programs for early child development on school sites as part of or adjacent to the schools is a suggestion we heard many times. It would make the transition to school easier for children; it would promote collaboration among teachers and those who provide parenting supports and early child development programs; and many feel it would encourage parents' continuing involvement in the schools.

Funding and operation of school facilities for education programs should not be so narrowly defined that it excludes use of school property for purposes other than classroom instruction. There are existing day care programs that are a base for early child development and parenting centres that may have to be removed from space in schools because they cannot afford market-rate rents which may be required under the new funding formula for schools. To lose this capability is clearly a move in the wrong direction.

It can make a huge difference to the cost of a program if facility space is provided by an existing public resource. The Parenting and Family Literacy Centres, operated in 34 Toronto schools and paid for by the board of education, reaches more than 7,000 families at a cost of \$1.1 million with its early child development programs. That's a maximum of about \$140 per family/per year. That's a very good deal for taxpayers. This is a very efficient component of an activity that is compatible with the concept of early child development and parenting centres.

Now that the Province has control over education funding, there is an opportunity to ensure that school facilities across Ontario are used for early child development programs.

People involved in community initiatives spoke often of having to deal with basic needs of families first. A family who does not have a place to live is not going to be able to provide a stable home environment for the children. This message was reinforced by provincial children's services organizations who spoke of their member agencies seeing more children who are going hungry, children who have to be taken into care of Children's Aid because the family is homeless, more family stress and more mothers with children in shelters for the victims of family violence.

The reduction in 1995 in social assistance benefits has probably increased the number of children below the low income cut off point. Homelessness is affecting some families and children in some centres because individuals cannot afford market rents and there are waiting lists for subsidized housing.

We are not in a position to judge the scale of need in this sector but these issues clearly contribute to some of the difficulties of some families at the lower end of the socio-economic scale. It is difficult to be a good parent if you do not have adequate housing.

A COHERENT AND COMPREHENSIVE APPROACH TO EARLY CHILD DEVELOPMENT AND PARENTING PROGRAMS AT THE PROVINCIAL LEVEL IS NEEDED TO SUPPORT THE DEVELOPMENT OF CENTRES AT THE LOCAL LEVEL.

Many communities are looking for signs that the Province understands the early years story and is prepared to take a leadership role to ensure that all Ontario communities take steps to ensure children get the best start in life. There are leaders in communities who are ready and able to take up the challenge if the Province sets out a vision and plan of action to increase public and private support for early child development and parenting.

The community constituencies encouraged the provincial government to continue its efforts to break down barriers between service systems. There is service collaboration happening in some communities, but it seems to be very dependent on the personalities involved. Mutual trust is an important factor. The government should try to ensure that its programs operate in communities so as to build trust among all parties. Some communities have all sectors pulling together and sharing resources, while others are having trouble overcoming barriers that separate agencies and sectors/systems (e.g. education, health, social services). But even the most collaborative efforts keep running up against systemic issues that are difficult for a single community to address.

Time and again, the people with whom we met in communities told of the difficulty inherent in having to work around the different requirements of different programs or systems to provide integrated programs for children and families. Some of them have developed an "outlaw" consciousness - they will do what needs to be done and figure out later how to deal with whatever protocols have been broken or find the money from another funding source or category.

Many groups emphasized the need for funding stability and better use of resources in respect to Ontario government programs.

THERE WAS CONCERN THAT FUNDING CONSTRAINTS WILL MEAN THAT:

- 130) Many neighbourhood schools will close, leaving communities without a potentially important base for early childhood development;
- 131) Child care centres located in schools will be forced out because parents cannot afford the fees to cover rents required by the new education funding formula;
- 132) The transfer of responsibilities from the provincial to the municipal level may mean the gradual erosion of some programs, such as family resource centres, because there is no guarantee of sustained funding; and

133) School boards may choose to close junior kindergartens because of the limitations of the funding formula, shifting a resource that is a potential support base for establishing programs for early child development and parenting.

Government decisions around programs that can influence the development and operation of early child development programs should avoid, if possible, weakening the capability for community-based early child development centres.

ARTS, MUSIC AND RECREATION SHOULD NOT BE OVERLOOKED AS AN IMPORTANT CONTRIBUTOR TO GOOD EARLY CHILD DEVELOPMENT.

We heard concerns about barriers to participation for young children in arts and recreation programs. Too often, these programs have fees and requirements for equipment that low-income and even moderate-income parents cannot afford.

Music, dance, art, theatre and athletics are not frills. Physical activity (through dancing and play-acting and games, for example) helps to drive brain development in the early years through the multiple sensing pathways of the brain. Recreational arts and sports can also help children learn to get along with others, develop their skills in movement and physical coordination, all of which influence the wiring and sculpting of the brain and build confidence in their ability to acquire new skills.

Studies of the benefits of arts and recreation programs located in low-income neighbourhoods in Ontario have shown that the community at large benefits (less vandalism and mischief, for example) when children are engaged in sound activities that benefit development. Children who are given a chance to develop their skills at an early age are more likely to participate in school and community arts and recreation programs.

There was a lot of interest in this subject among a diverse group of parents who attended a Toronto meeting.

"Kids who live in small spaces need more supports, more places in the community to go.

They don't have big backyards to play in. In a little apartment you have to get out more, but where is there to go?"

"Right. How long can you stay in the local park or playground with your child in the middle of February?"

Why aren't schools open after hours? Why do we run between the community centre and the school? Why can't it be delivered as a system for kids? The facilities are paid for."

"What about those things that are supposed to be good for brain development, like music and art? Are they going to be available in school anymore? I don't have the money to send my kids to extra programs."

"If they close our school, there won't be a community anymore."

"The trend in government is to pass on responsibility. But the role of government is to be a leader of the community. The private sector is not going to pick up the slack. Parents from all sorts of incomes should feel worthwhile. Now, if you can't afford the commercial facilities, you are left out in the cold."

"All kids deserve the same quality, the same chance."

POLICING IS ONE EXAMPLE OF COLLABORATION AMONG PROVINCIAL AND COMMUNITY AGENCIES AND ORGANIZATIONS, AND EARLY CHILD DEVELOPMENT.

Community policing is an approach to the delivery of police services which recognizes that the prevention of crime, public safety and the maintenance of order are mutual concerns of both the community and the police. In Ontario community policing encompasses a wide range of activities which are based on police and community partnerships. Police often encounter children and families in difficulties and in situations of crisis. (They do a lot of home visits.) Where arrests occur and protocols exist, police contact social support agencies, such as Children's Aid. But for many situations referral to an early child development and parenting centre would be an enormous advantage to everyone. In our discussions with them, those who know parts of the provincial scene were not surprised by the poor grade three test results in some communities. They know that these are regions in trouble with adverse effects on families and young children.

In the Region of Niagara, there is an innovative ongoing prevention program which is a partnership between the Niagara Regional Police Department and the local public health department. Staff from both disciplines work together on programs to prevent injuries among children in motor vehicle accidents.

The Mississippi Mills Community Policing Committee, in cooperation with the Ontario Provincial Police (Perth detachment), is touring a puppet theatre called "Kids Like Us" in area schools. The first theme is bullying, and there are plans for other shows. Funding support has been provided by the Ontario Provincial Police Association, United Way, and the town of Mississippi Mills.

The Peel Regional Police have initiated a proactive process which responds to the needs of young children living in potentially negative family environments. Police are often the first (and maybe only) home visitor to families with young children who are experiencing difficulties. The Peel Regional Police often come into contact with children who are at risk but who are not in need of protection. They have begun to informally notify the Children's Aid Society (CAS) of all occurrences and will be implementing a formal system to report such events. Thus, the local CAS group is alerted to potential problems and may be ready to intervene or offer support to families in difficulties. If there were identified centres for early child development and parenting, police would have a community base to refer parents for support, rather than to the local CAS.

The Hamilton, Guelph, and Metro Toronto police services all have groups working with communities to help early child development.

There are a number of examples of community-based policing work which help communities build a better capacity in early child development and parenting. Their proposed community-based

information network could be built to meet some of the needs of communities across Ontario to exchange information and to learn from each other.

The involvement of policing in these initiatives helps to build community participation and cohesion and makes constructive use of an important provincial and community resource.

THERE ARE MODELS IN COMMUNITIES THAT CAN BE SHARED. BUT LOCAL INITIATIVE AND COMMUNITY DIVERSITY MUST BE RESPECTED.

Where possible, the key ingredients in successful programs should be shared and replicated across the province, but we must be careful not to impose top-down, cookie-cutter solutions. Communities vary in their cultural, ethnic and linguistic diversity. There are differences among rural and urban regions. The need to be community-sensitive is particularly apparent in relation to Aboriginal communities. This was brought out in several of our meetings. They must be assured that their young children are being nurtured in the values and languages of the First Nations.

The linguistic and cultural integrity of the Francophone community, which has historic rights in this country, must also be assured.

In recognition of the significance of the early years and the importance of supporting language skills at a young age, Francophone school boards have led Ontario in offering full-day junior kindergartens.

Despite this diversity, transfer of shared success factors is already happening in some cases.

Two examples are:

◆ ***Kids Count***, in London, is starting to be replicated in four other communities (Windsor, Acton, Burlington and Caledonia). Kids Count emerged in 1994 from a study by the London board of education on the factors hampering children's success at school. Neighbourhood Groups include parents, educators, children and other community members. Partnerships have been built over time to bring everyone to the table. Programs include school breakfast programs, parent support groups, parent and child literacy and other locally-led initiatives.

◆ ***Roots of Empathy***, developed by the Parenting and Family Literacy Centres in Toronto inner-city schools, is slated to be replicated nationally and internationally (and hopefully provincially!). It brings an infant and mother from the community (who are in the parenting program) into elementary school classrooms monthly so that children can see and learn how a baby develops and what a baby needs in order to prepare the next generation for parenting.

The information exchange network proposed in the previous section could help communities form what might be considered a community continuing education program to develop these centres.

COMMUNITY LEADERSHIP MUST BE EMPOWERED AND SUPPORTED.

Dynamic leaders - people who could be called "social entrepreneurs" - take on social problems by bringing together people and resources to work towards a shared vision and to create viable solutions for their community. Local leadership comes from different places, depending on the community. Some community groups talked of a Mayor and Council who were informed and

supportive; others had local government officials who were disinterested, if not hostile. The same applied to schools and school boards. Schools such as Sunset Park in North Bay are a focal point for community collaboration on behalf of children. Some school principals go out into the community to drum up support for an early child development program in their school, while others do not see a role for themselves beyond the school walls.

There are hospital administrators who are interested and willing. For example, the St. Joseph's Women's Health Centre in Toronto provides space for the Parkdale Parents Primary Prevention Project, a CAPC project that provides prenatal nutrition and support, a parent drop-in, parent relief, education, early child stimulation and a host of other supports for neighbourhood mothers, infants and young children. The new hospital complex in Sudbury is working with public health and regional government to create stronger early child development capacity in the community.

There needs to be some way to empower and support community leadership to let good ideas grow and flourish. Rather than designating a community lead for early child development that has to be the same everywhere, it may work better to provide incentives for those who have the skills and interest to take the lead. There is recognition that these leaders are social entrepreneurs. The newly established School for Social Entrepreneurs in London, England has described social entrepreneurship as:

" Social entrepreneurs do exactly the same thing [as business entrepreneurs]. They spot gaps in our social fabric, and act as intermediaries between capital and labour to create new social institutions and instruments to fill those gaps. They may use the same degree of enterprise and imagination as the best business entrepreneurs, but their aim is to enrich society; to bridge the gap between the powerful and the powerless, and to create a commonwealth of opportunity." ¹⁴⁰

The government could consider creating a fund to support social entrepreneurship. This type of leadership is important we think for community development.

THE PRIVATE SECTOR CAN AND SHOULD PROVIDE LEADERSHIP AND FINANCIAL SUPPORT FOR EARLY CHILD DEVELOPMENT AND PARENTING IN THE WORKPLACE AND ELSEWHERE IN THE COMMUNITY.

Slowly, there is an increasing recognition by the public sector which employ parents, especially women with young children that they should support the development of early child development centres (e.g. Workplace Safety and Insurance Board in Toronto and Ontario Provincial Police headquarters in Orillia). There are fewer examples in the private sector.¹⁴⁰ There may have to be incentives offered to draw the private sector into supporting programs in their own workplaces or in the broader community or both.

A public forum put on in 1997 by the Industry Education Council of Hamilton-Wentworth has galvanized interest and resulted in *Connections for Kids*, a collaborative network of citizens, with private as well as public sector involvement.

Employers and unions can agree to support early child development and parenting initiatives, including employer supported, work-related centres, family-friendly personnel policies and expanded maternity and parental leaves and benefits. Windsor is one community where the

business sector has become involved. The Big Three auto companies (General Motors, Ford and Chrysler) financed the capital start-up of a child care and parent resource program for employees, and continue to support the centre, which services 135 families. Support for the program was negotiated by the Canadian Auto Workers.

The family time deficit is a well-known phenomenon. Enlightened employers provide family leave time for parents to care for sick children or take care of other family concerns so that when their employees are at work, they are not distracted by worries about home. There is much more that could be done in the workplace to support parenting. There are models of family-friendly employers and other businesses who understand the importance of early child development. These employers not only understand the importance of early child development for their employees, they also understand that family-friendly policies create more loyal and productive employees.

Business leaders who understand the importance of early child development should be encouraged to use their influence in the business community to spread the word. This has been recently emphasized by articles on business in *Fortune* magazine and *The New York Times*.^{142, 143}

The leaders of quality for profit day care centres that are running early child development and parenting centres could help build centres in association with the business sector in the province. This could be an interesting private sector initiative that can bring better private sector understanding of the importance of early child development and parenting. Can the government create incentives to bring these groups together?

TARGETING MEASURES TO SUPPORT CHILDREN AND FAMILIES WHO ARE AT RISK OR HAVING DIFFICULTIES IS NECESSARY, BUT IT WORKS BEST WITHIN A SYSTEM AVAILABLE TO EVERY ONE .

There is great sensitivity among parents about being identified or labelled as a bad parent or an at-risk family. One comment from a rural area was that a parent would rather have the pest control show up at her door than social services.

Those who provide services walk a fine line. You can stigmatize and humiliate parents by singling them out for service, but you can also miss the most needy families by offering a service to everyone that does not take into account barriers to participation for disadvantaged families (e.g. even a small fee, the need for children to have the right equipment or shoes or transportation to and from the program). Recreation programs, unfortunately, often fit into the latter category. They are usually offered to all children, but many poor children can't participate.

Many of the initiatives we visited were in so-called high-risk, disadvantaged neighbourhoods. These families need the help and support they are getting, but there are other families in other neighbourhoods that can't go to the Better Beginnings or the Community Action Program for Children in their city or county because they aren't in the right geographic catchment area. Some of the isolated, depressed mothers that we heard from live in middle-class neighbourhoods.

There is no easy solution. But it would seem best to create programs that are available to families in all sectors of society that are available without the risks of labelling or discrimination.

PARENTS ACROSS THE SOCIOECONOMIC SPECTRUM COULD USE ADVICE AND SUPPORT IN ENHANCING THEIR PARENTING SKILLS.

The quotations that follow were made at a meeting in Toronto of a diverse group of parents of young children. The parents came from very different life circumstances, incomes, backgrounds and cultures.

"My traumatic period was the first year after my child was born. I did not have any parenting skills. There was nobody to call. You want the best for your child, but you don't know what it is. A lot of us only know how we were parented. There is this sense of complete isolation. My husband would leave for work, and I would have tears running down my cheeks."

"I'm a stay-at-home mom, but I don't know how much longer I can afford it. Then what will I do?"

"The whole problem is that people don't think child care is work. You don't get the tax breaks. You don't get respect."

"I'm very grateful to have the parenting centre. We started last year. My son is improving."

He knows his alphabet. I am always with him. There are materials to show him and toys to play with. He is bored at home with me. Here, he gets to mix with other kids. He's two and a half."

EARLY CHILD DEVELOPMENT AND PARENTING INITIATIVES MUST INCLUDE ALL CHILDREN, INCLUDING THOSE WHO ARE LIVING WITH SPECIAL DIFFICULTIES AND CHALLENGES.

More than 2,600 children aged zero to five are in the protective care of the province. Most live in foster homes. They are often disconnected from their communities and neighbourhoods as well as their family environments. These children are often at the margins of early childhood programs yet their need to belong and participate is clear. Ontario is making changes to shorten the timeframe young children are left in limbo but more can be done to ensure that they are able to participate in early child development programs.

There will always be a small group of children who are diagnosed with developmental or physical disabilities at birth or soon after. They benefit from inclusion in early child development and parenting initiatives. It can make a significant difference in the levels of competence they develop in spite of permanent limitations.

RESOURCES FOR THE EARLY YEARS SHOULD NOT BE INCREASED AT THE EXPENSE OF SERVICES THAT ARE HELPING OLDER CHILDREN AND YOUTH OVERCOME DISABILITIES AND DISADVANTAGE.

We heard concern about "robbing Peter to pay Paul". In a period of government spending restraint, when resources are being reallocated among systems and agencies, there is anxiety about where the money may come from for a government to increase its investment in the early years.

This Study is not in a position to say how dollars should be reallocated. But we share the concern that services that are helping children and youth rebuild their lives and learn to cope with disabilities and overcome disadvantage because of a poor early start should not be taken away. If we are successful in improving early child development, those expenditures on older children may decrease over time. But the need is not suddenly going to drop next year. There are other sectors from which government may be able to reallocate resources.

A CAPACITY TO SHARE INFORMATION AND PROMOTE PUBLIC UNDERSTANDING OF THE EARLY YEARS STORY NEEDS TO BE DEVELOPED.

There is a real hunger for more information about parenting and early child development from people in all walks of life. We found that many people are unaware of the new knowledge from neuroscience and what it means. Early childhood education professionals working in child care are more likely to have heard this message than others. But other professionals, including the teaching and health care professionals, are not necessarily tuned into this new understanding. A recent survey of professionals working with young children revealed that most groups did not have a grounding in basic healthy child development as part of their professional educational programs.¹⁴⁴ Schools seem to be mostly unaware of the linkages between what happens in the early years, readiness to learn in kindergarten, and success in grade eight and beyond. Knowledge about human development should be part of post-secondary education programs, particularly in the professional programs that are part of, or influence early child development (education, medicine, early childhood education, psychology, nursing, etc.).

On the other hand, we were surprised and pleased to be told the story of brain development in the early years by a parent who had learned about it at a parenting centre in a school. The parenting program provides information in a large number of languages to get past the language communication barrier.

In transmitting the new understanding to communities it must be presented in a clear manner that is understood and accepted by the elites, professional groups and the business community. This requires a carefully thought out initiative that engages all sectors of a community under strong, credible leadership.

"We are a family within the bigger family of Parkdale School. We speak many tongues but one voice. We are united in our dream that each and every child in the centre and in the school will reach their full potential and that all the parents, grandparents and teachers will pull together to support one another to make that dream a reality. Parkdale School is about diversity. Diversity is our strength."

2. Parents and Staff of Parkdale Parenting and Family Literacy Centre

Ī Lessons Learned

The community site visits were instructive.

We learned five key lessons:

1. There must be a shared vision and commitment in the community to take action on the early years of child development. Leadership by the members of the community, sensitive to the needs of the community, are often the source of good programs. The broader the understanding of the early years of child development by all sectors (public and private) the better the prospects for putting in place quality programs for early child development and parenting.
2. Support from all levels of government for early child development and parenting must mesh with community-based initiatives. This will require sustaining a delicate balance among government and non-government programs.
3. Within a provincial framework of standards, communities should have flexibility to tailor programs to the diverse needs of the local area. They should have opportunities to learn from each other.
4. Professionally or service-driven programs in early childhood development have a risk of labeling or stigmatizing people. Professional service programs should be set up to meet the needs of children and parents in early child development and parenting centres and not be in competition with them.
5. It will take time to establish programs for early child development to improve opportunities and outcomes for young children, and it is necessary to get started immediately.

IN CONCLUSION

There are in most rural and urban communities initiatives in both the public and private sector on which to build a stronger and broader range of early child development and parenting centres for all Ontario's children.

- ◆ Government programs wherever possible should be designed to integrate with community- based initiatives and not handicap the building of partnerships and trust at the community level.
- ◆ Initiatives for early child development that appear to be strong involve as many components of the public and private sector and local government as possible.
- ◆ Social entrepreneurs are an important source of community leadership. The government might consider establishing a fund to support the initiatives of social entrepreneurs. Strategies for supporting these initiatives at the community level are important.
- ◆ A variety of sites can be used for early child development and parenting sites ranging from business sites, schools, to homes that are part of a hub and spoke system. It is important that sites be easily accessible for parents.

-
- ◆ The early child development and parenting centres must implement quality programs that enhance early child development and be sensitive to the following:
 - viii. The cultural, ethnic, linguistic and community diversity;
 - ix. The complex intergovernmental issues;
 - x. Making optimum use of existing resources; and
 - xi. Standards and outcome measures set by government which are sensitive at the community level.
 - ◆ In view of all of the points, it is our view that an evolutionary approach to establishing community-based early child development and parenting centres should be adopted which builds on existing community initiatives. We should use this approach to establish, over time, centres available and accessible to children from all sectors of our society. Because of the importance of the early years, the framework for development and incentives should be designed to involve governments and the public and private sectors in communities.

CHAPTER 6

A VISION FOR AN EARLY CHILD DEVELOPMENT AND PARENTING FRAMEWORK

Given the evidence we have reviewed, what could and should society do to ensure all children have equal opportunity for good brain development in the critical early years? We know that the provision of quality early child development centres that involve parents can substantially improve the outcome for all young children.

The concept of early child development and parenting centres is neither original nor radical and has been proposed in Ontario several times in the past two decades.

Ī More than 20 years ago, Dr. Bette Stephenson, when she was Minister of Education in the government of Premier William Davis, proposed that such centres should be established in the public schools.

Almost 20 years ago, the Report of the Commission of Inquiry into the Education of the Young Child recommended that the: *"Province of Ontario should create Centres for the Family and the Education of the Young to serve as the essential instruments for the care of education of children from conception to age eight."*¹⁴⁵

In 1985, the Report of the Early Primary Education Project of the Ontario Ministry of Education recommended that: *"the Minister of Education and school boards adjust existing policies related to school closures and use of school space in order to facilitate the provision of educational support services for families and young children in neighbourhood schools."*¹⁴⁶

In 1990, *Children First*, the Report of the Advisory Committee on Children's Services recommended that the: *"Ontario government, in partnership with parents, service providers and others whose lives touch children, must develop a public agenda to ensure that the entitlements of children are met. The agenda will guide future legislative, planning and policy development in all ministries that have a direct or indirect influence on supports and services to children."*¹⁴⁷

In 1994, the Ontario Premier's Council on Health, Social Justice and Well-being recommended in *Yours, Mine and Ours* that: *"to ensure a balance in work and family life that allows parents some flexibility when they need it, particularly when children are in their early years, there should be family-friendly policies in the workplace."*¹⁴⁸

Later in 1994, in *For the Love of Learning*, the Royal Commission on Learning recommended that: *"Early Childhood Education (ECE) be provided by all school boards to all children from three to five years of age whose parents/guardians choose to enrol them. ECE would gradually replace existing junior and senior kindergarten programs, and become a part of the public education system."*¹⁴⁹

The Caledon Institute of Social Policy's paper, entitled *Social Policy 2000* says, in reference to early child development: *"Even if it were practicable, a year or two sooner to school would be an inadequate response to the development needs that begin in infancy. The requirement is for centres available to children from an early age, where pre-school children from all backgrounds can come together... Daycare is a misleading label. The primary function is not to enable parents to go to work. It is to provide the stimuli and socialization from which children of the well-to-do and of stay-at-home parents may often benefit as much as the children of the poor and the workers. The ideal centre is one to which almost all children want to go from an early age, with their parents happy to agree and, indeed, eager to contribute time as volunteers."*¹⁵⁰

This chapter describes the framework for an early child development and parenting program in Ontario. Central to the framework are early child development and parenting centres which are evolving in communities throughout Ontario. The concept draws together and expands the full range of programs and services for children and their families from conception to six years. Other components of the framework that support early child development and parenting include: increased parental and maternity leave and benefits; family-friendly workplaces; tax incentives; an integrated, independent outcome measurement; and community information networks.

The early child development and parenting centres would be available across Ontario, but should evolve in ways that best suit community needs and priorities. To begin our discussion, we describe a community-based evolutionary approach and provide an example of an existing model of a community-based and community-driven early child development and parenting centre in Ontario. Other examples are described in Chapter 5 and in the working paper which summarizes the community fact-finding visits. We have based our concept of early child development and parenting centres on the innovative programs that we have observed in communities and on the World Bank initiatives in the developing world and the Inter-American Development Bank initiatives in Latin America. This concept ensures optimum parenting and early childhood development support for the most sensitive period of brain development from conception to when children enter the school system. It is a two-generation approach - the parent and the child.

In this chapter, we lay out the elements of our concept of an ideal framework.

We discuss:

3. early child development and parenting centres, including their principles, structure, extra efforts, curriculum, location, and staff;
4. navigating the course between vision and implementation and some of the issues involved;
5. other components of a system to improve early child development.

A COMMUNITY-BASED EVOLUTIONARY APPROACH

One option for ensuring that all families in Ontario have access to an early child development and parenting program would be to mandate a new public system, to be created, funded and operated as a provincial government program. We have rejected that option, in favour of a more community-based evolutionary approach, because we are convinced that:

- 134) It is important in respect to the early years of child development that communities and families make decisions about what works best for them. Ontario communities have diverse cultural, linguistic, geographic and other characteristics. Early child development and parenting centres must be sensitive to the diversity of families, communities and their linguistic, ethnic and cultural characteristics. The locations and structures of the centres will vary with the characteristics of communities. The development of a range of centres to provide diverse choices is very difficult to do in a centralized, technical, bureaucratic model.
- 135) Parents should have choices. There should be a range of options for parents and their young children, not a single, one-size-fits-all program. Parenting is a very personal thing, and some who choose not to participate in any program must be free to do so.

-
- 136) A program that is created top-down and laid on communities, rather than growing up through community initiative and support, will be less sensitive to the needs of families and the characteristics of the communities; it will also be less likely to engage the kind of leadership and the kind of broad community support, buy-in and understanding that is necessary for the initiative to take root and thrive.
- 137) Communities should be encouraged to learn from each other, and build on what is already working. In many communities, there are public and private sector initiatives to provide good early child development and parent education and support that are a base for new developments.
- 138) There should be both public and private sector understanding, commitment and investment in an enhanced early child development and parenting program for families across Ontario. Both private and public sectors must be galvanized to become involved in the early years in communities to develop a highly competent and healthy population in the next century. Community mobilization on behalf of the next generation can help build what is often referred to as social capital or cohesion, which strengthens the fabric of community and our ability as a society to meet the challenges of socio-economic change.¹⁵¹ Social capital or social cohesion is thought by many to be a key factor in long-term economic growth and the maintenance of tolerant democratic societies.

The many initiatives - including child care centres, nursery schools, parent co-operative pre-school centres, family resource programs, child care resource programs, parenting and family literacy centres, home visiting, kindergartens, pre- and postnatal support programs and prevention and early intervention programs -- that now operate in communities as separate entities are a base on which communities can create a more coherent system of early child development centres sensitive to all sectors of society.

We wish to emphasize that when we refer to "child care", we do not mean custodial care, where children are simply watched and fed. We are referring to centres which engage children in play-based problem-solving activities to promote good early child development and learning.

When we talk about integrating kindergarten into early child development and parenting centres, we are not talking about making children go to school at an earlier age. Early child development programs should not be mandatory. They should, however, be accessible and available to children and their families in all sectors of society.

Early child development initiatives in communities must strive to be accessible and available to all children, including those children with learning, language, behavioural, physical or developmental difficulties. Programs must incorporate early identification of problems and have the capacity to adapt the setting to meet the needs of the individual child. This will require specialized expertise and resources and good links with specialized services and the health care system.

These initiatives cannot be considered as a mandated, universal government program. We are proposing that communities build on existing strengths and resources to create a variety of solutions compatible within the goals of the early child development and parenting program, based on public, private and local communities' resources. The role of governments, the private sector and communities is to ensure the centres are available and accessible in all sectors of society. One

way of looking at this is to paraphrase the phrase in the Bruntland Report on the environment - "Think provincially, act locally".

We are asking for creation of a new "first" tier of programming for Ontario's youngest children that makes use of the best knowledge about brain and early child development to maximize children's potential for the future - their capacity to learn in school and throughout their lives, their ability to get along with others and cope with life's challenges, their chances of staying healthy, and their prospects of becoming fully contributing members of our society and economy.

Creation of this new tier will require increased resources from the private and public sectors to provide quality early child development and parenting centres accessible to all Ontario families. We are seeking to provide incentives to the private sector which employ an increasing proportion of women with young children, to provide some of the resources. However, if there is little take-up from the private sector, then more public resources will be needed to ensure that the communities have the funding to establish the centres. In some regions, early child development centres may be totally financed by governments.

Next is a description of an existing model of a community-based and community-created early child development and parenting program in Ontario.

KIDS 'N US SOUTH EAST GREY COMMUNITY OUTREACH

"Over the course of the past 13 years, we've learned a lot of important lessons. We've learned that if you want to develop community services in a way that truly meets your community's needs, then you have to:

- ◆ *start from your own base and define where you want to go as a community;*
- ◆ *challenge conventional views on how to deliver services;*
- ◆ *learn how to use all your community resources, including government policies and funding; and figure out how to fit the whole puzzle together in a way that treats communities and families as a whole instead of as targeted, isolated groups."*

6. Carol Gott, founder of South East Grey Community Outreach. **152**

¶ The South East Grey community is eight townships, five villages, and 25,000 residents spread across a sizeable chunk of rural Southwestern Ontario. There are only three centres with populations of more than 600 (Markdale, Dundalk and Flesherton); 80% of residents live on rural concessions or in small hamlets. Farming and tourism are the major industries, and a high proportion of the population is self-employed. Many parents travel long distances to work; stay-at-home parents tend to be isolated. It takes about an hour and a half to drive from one end of South East Grey to the other.

For 13 years, South East Grey has been the site of an innovative, community-based program for children and families. Kids 'N Us South East Grey Community Outreach or SEGCO was formed in 1985 by a group of area residents who organized to meet the need for accessible, rural child services important for early child development and parenting. From these volunteer community roots, SEGCO has evolved into a

comprehensive system of support for families that provides more than 20 programs. It has become a model for other communities in Canada.

SEGCO was incorporated as a non-profit organization in 1986. It was established with the involvement and support of Bruce Grey Children's Services, the Children's Aid Society, Grey Owen Sound Health Unit, the Board of Education, area churches, local Women's Institutes, local doctors, and provincial and municipal governments. Over the years, it has built many partnerships. It has also been able to attract a variety of funding, including both the federal and provincial governments.

The organization's core values and priorities have been maintained as its programs have evolved. They include:

- xii. a focus on families' needs;
- xiii. accessibility of programs;
- xiv. development of a comprehensive, high quality range of program options;
- xv. organization of a cohesive, integrated system of early child development and parenting programs;
- xvi. promotion of the involvement of community members and agencies in establishing early child development (including child care) as a broad category of family support which benefits the whole community.
- xvii. Its philosophy is reflected in the quote from its founding executive director Carol Gott (above). The organization has thrived primarily because it responds to its community.

SEGCO provides more than early child development and parenting support. It provides a variety of programs for youth (including family life education); a community kitchen and garden program; a good food box; employment support programs, and much more. We concentrate here on its programs to support early child development and parenting because South East Grey shows what a community with a vision, dynamic leadership, solid partnerships, and a commitment to supporting families and children can achieve.

The way that SEGCO accomplishes its outreach to a widely dispersed population of families is one of its key strengths. In 1992, it established an "integrated hub model" of service delivery. It has seven "hub" sites throughout the geographic area of South East Grey. The hub model provides accessible services for parents; there is one access point for all the programs for families in a geographic area. Most services are available at all locations. There is also outreach from the hubs to families who cannot get to the hub site. The hubs can tailor specific services to meet local needs.

The hub model also ensures services are integrated. The staff teams at each hub deliver all program options. Rather than dividing program options and staff according to funding streams - and asking parents to fit themselves into different funding categories - SEGCO distributes funding on a geographic basis to the hubs. By blending funding, the organization has been able to be more cost-effective and more creative. It remains accountable to its funders by re-streaming its funding for reporting purposes.

The hubs are located in a variety of locations, including school property, a storefront on a village main-street, a residential and recreational facility for physically-challenged adults, and buildings the organization owns adjacent to schools, parks and arenas. Outreach programs are also offered in schools, churches and other places.

SEGCO has a number of different components. There are many programs that provide education and support to parents and other caregivers.

For example, there are:

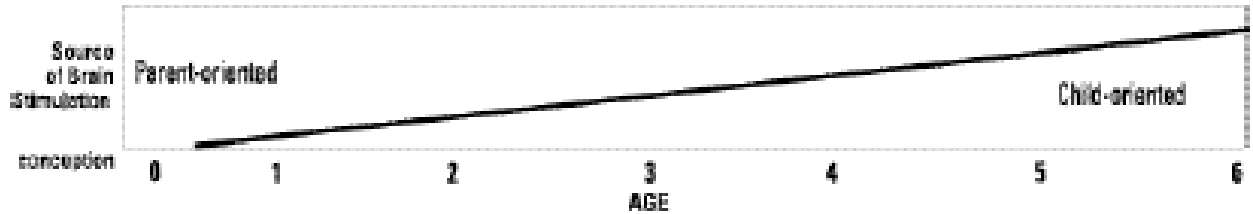
- xviii. community playgroups for parents, caregivers and young children;
- xix. a telephone "warm" line, which provides information and referral on such topics as child development, choosing child care, or providing home child care;
- xx. support to home child care providers;
- xxi. mobile toy lending library for families; and
- xxii. a resource and toy-lending library for use by child care centres, home child care providers, nursery schools, playgroups and community schools (more than 50 theme-based boxes that comprise a teaching unit with toys, games, materials, and activity suggestions).

SEGCO folds into its seamless spectrum of services licensed centre-based child care programs that provide full-time, part-time and hourly service. Drop-in care is available.

Other programs include:

- xxiii. parental respite for at-home parents;
- xxiv. supervised (licensed) home child care - including screening and monitoring of caregivers in parents' homes (often used where the parents work shifts or irregular hours and cannot use centre-based care);
- xxv. support for supervised and independent home child care providers - through the toy and resource lending library (see above), home visits, workshops, etc.;
- xxvi. a program, in cooperation with the public health unit, for teen parents;
- xxvii. children's workshops for pre-schoolers and school-age children - offered periodically, usually in conjunction with other community resources such as libraries or museums;
- xxviii. prior to school board amalgamations, SEGCO piloted a junior kindergarten program with the board of education that had early childhood educators and teachers working together;
- xxix. SEGCO provides an example of how early child development and parenting centres can be developed in communities and be sensitive to all sectors of the community. Other examples of early child development and parenting centres are found in Chapter 5 and in the working paper which summarizes the visits to communities.

FIGURE 6.1 - FRAMEWORK FOR EARLY CHILD DEVELOPMENT & PARENTING



COMPONENTS OF EARLY CHILDHOOD DEVELOPMENT & PARENTING CENTRES

At the hub:

- Parent support (including non-parental care arrangements) & education
- Play-based (problem-solving) learning guided by early educators & parents
- Toy & resource libraries, family events, nutrition programs & information & referral services
- Prenatal & postnatal supports

Linked to:

- Home-based satellites
- Home visiting network
- Specialized services

SERVICES

Specialized Services for Young Children & Families

Universal Public Health

Universal Medical Service

INCENTIVES TO SUPPORT EARLY CHILD DEVELOPMENT & PARENTING

Maternity/Parental Leave

Private Sector Tax Incentives

Social Venture Capital Fund

OUTCOME MEASURES

Birthweight Neonatal Screening Readiness-to-learn

National Longitudinal Survey of Children & Youth

FRAMEWORK FOR AN EARLY CHILD DEVELOPMENT AND PARENTING PROGRAM

Figure 6.1, Framework for An Early Child Development and Parenting Program, redraws the chart from Chapter 4, Sources of Stimulation for Early Brain and Child Development. The new chart illustrates the key components for early child development and parenting in Ontario. As in the earlier chart, the representation shows the balance between the parent emphasis (parent-oriented) and child emphasis (child-oriented) on brain and child development during the early years.

The figure also shows services that support families and children in the early years period, incentives for parents and the private sector (such as maternity and parental leave, child care supplements and tax credits) and early years outcome measures.

EARLY CHILD DEVELOPMENT AND PARENTING CENTRES

What we are calling early child development and parenting centres are the core part of an integrated framework of activities and supports for the prenatal period and for children zero to six years and their families, based on our understanding of the critical periods of brain development. The centres would be key initiatives to create a new "tier" for the early period of development, before the public education "tier".

Their purpose is to:

1. Ensure children's optimal early development and learning;
2. Creating the base for children to succeed in the education system and throughout the life cycle;
3. Support responsive parenting and care-giving, including safe environments and good nutrition for children;
4. Respond to the child care needs of parents at home full-time, and those who are employed in the workforce on a casual, part-time or full-time basis;
5. Link families in need of other professional services to other service programs for children and families; and
6. Support the growth and development of parents, prepare the next generation for parenthood and their ability to function as contributing members of society.

Early child development and parenting centres deliver a variety of adult-oriented and child-oriented activities. The selection and organization of specific activities are driven by local needs and are sensitive to diverse cultural and linguistic backgrounds.

Principles

The following principles lay the foundation for the early child development and parenting program:

1. Early child development and parenting centres that are available, accessible, affordable and optional for all young children and families in Ontario from conception to entry into grade one in the school system (parents may choose to bring their children or not);

-
2. Quality parenting and early child development centres that are both parent-oriented and child-oriented;
 3. Early child development programs that are environments for children to engage in play-based, problem-solving learning with other children and adults;
 4. Responsive relationships between adults (early child development staff and parents) and children that increase the potential of play-based learning;
 5. Quality programs that teach family literacy and numeracy to parents and other caregivers from diverse cultural, ethnic and linguistic backgrounds;
 6. Parenting programs that support parents and other caregivers in all aspects of early child development;
 7. Parent participation in early child development programs that enhances the child's early learning and optimal development in the home environment;
 8. Appropriate supports and expertise that are available to allow all children to participate fully, regardless of physical, developmental, language, learning or behaviour difficulties;
 9. Ability to provide special efforts that may be necessary to engage some families and children whose circumstances make it difficult for them to be involved in the early child development and parenting centres;
 10. Early child development and parenting centres, regardless of location, that are linked to the local primary school and with other institutions such as libraries, recreation, and cultural activities in their communities;
 11. Early child development and parenting centres that provide a flexible continuum of services to meet the needs of children and parents at home, at work and in school; and
 12. The effectiveness of early child development centres that are monitored using a developmental readiness-to-learn measure when children enter the school system

Structure

Although there are common principles, there is no single institutional structure for early child development and parenting centres that can easily meet the family diversity in our communities. Parent respite care may be offered. Some centres will offer full-day and extended-hour programs, such as those now provided by child care centres in addition to the core early child development programs. Centres will offer other types of service or support and will resource satellite family-based early child development programs in homes. As children grow from infancy into the pre-school years, most will participate in centre-based early child development programs on a regular basis.

Four central components of early child development and parenting centres are:

1. Early child development and parenting activities at the centre. The Centres will be both parent- and child-focused and will blend activities and supports for young children and their parents from the critical periods from conception until school entry. The Centres can include:

-
- 139) Group programs for children which involve parents and offer play-based, problem-solving experiences and include opportunities to learn to get along with other children, early literacy and numeracy, music, physical activity, and creative art s;
 - 140) Child care - full-time, part-time and occasional (or respite) non-parental care arrangements;
 - 141) Prenatal and postnatal support - nutrition programs, child birth and child development information, group discussions and workshops for pregnant women and new mothers;
 - 142) Drop-in programs, toy and resource libraries, information and referral services, family events, and nutrition programs;
 - 143) Family literacy and numeracy, parenting courses, workshops, and informal support s for parenting capacity;
 - 144) Adult training and education for parents, including literacy, English or French Second Language, life skills and computer skills; and
 - 145) Support to parents to enhance self-esteem.
2. Home visiting. This component provides outreach support to parents and other caregivers with young children in their own homes and links them with informal networks and community resources. It enhances parenting skills and builds parenting capacity, and encourages children's play-based problem-solving learning.
 3. Home-based satellites. Caregivers who provide early child development programs for up to five children in their own homes will be supported and resourced by the early child development centres and home visiting.
 4. Early problem identification and intervention. Early child development centres and home visiting will be able to identify and support children and families experiencing difficulties. Where appropriate, children and families can be referred to specialized services.

Extra Efforts

There will always be some families who need additional support or extra encouragement to take advantage of a service that could be of value to the parents and their children. Extra efforts or active outreach must be part of what early child development and parenting centres do. Otherwise, families who are most in need may well be left out.

Just making a program generally available in a community does not mean it will reach all children and families who could benefit. If we are to achieve our ideal of a program that provides equal access and equal opportunity for participation so that all children have equal opportunity for optimal development, early child development and parenting centres must work with their communities to ensure that families who are least likely to join a centre know about them and how to join. Whether parents need help filling out an application form or they need transportation to bring their child to a centre or they simply need some encouragement and welcoming, these additional initiatives are an integral part of early child development and parenting centres in a community.

Parent-Oriented Curriculum

The parent/child relationship is the most powerful influence on children's early brain development particularly in the first two years. Learning to respond to and stimulate children from birth builds core competency and coping abilities before they enter the formal school system. Parents and other caregivers receive parenting support, nutrition advice and education, access to community resources and learn to support prenatal, infant and young children's development and play-based learning. They learn that literacy begins by birth and develops at the same time as oral language. They also learn that play-based problem-solving learning sets the base for later mathematical thinking and other cognitive functions. All programs will emphasize and support the parenting role and parenting skills. Parents' participation is an opportunity for parents to learn from early child development staff and to teach each other. The participation experience will also strengthen the involvement and engagement of parents with their own child. Adult literacy and English or French Second Language training can be delivered to parents with young children in early child development and parenting centres. Parents' experiences in participating in these programs will prepare some to volunteer in early child development programs and later, with training, in elementary school classrooms. Parent participation is one strategy to ensure there are enough adults to respond to the immediate needs of young children. It is also a strategy to support children's academic achievement.

Child-Oriented Curriculum

Play-based, problem-solving learning environments offer children an array of opportunities to explore, discover and create. An environment designed for learning by solving problems through play provides rich sensory stimulation which the young child absorbs and integrates into the core brain development. A bucket of blocks offers endless opportunities to arrange and rearrange, much like a scientist or mathematician rearranging ideas to find a solution to a problem. Oral language play and storytelling through pictures and books lays the foundation for reading and writing. Moving sand through funnels and sieves or arranging small cars in garages builds an understanding of the physical world and the cognitive weight of numbers necessary for mathematical thinking. Guided play with board games using number lines, dots on a die and markers builds the understanding of number which underlies mathematical computation. Make-believe play with dress-ups and props is practice to cope with tensions and stresses. Play-based problem-solving with other children and an adult is an early learning strategy that has a crucial effect on early brain development and should be the format for children entering the school system.

Location

Schools make logical sites for early child development and parenting centres in keeping with the concept of lifelong learning. Schools exist in local communities, have space which is adaptable to the needs of children and facilitate the integration of early child development programs into the next "tier" of the education system. The early connection to children's later education setting can enhance a smooth transition to school. Parents who have an early connection to the school are more likely to support and be involved in their child's education, which improves children's chances of academic success.

Community recreation sites, churches and some workplaces are also sites for programs that fulfil most aspects of early child development and parenting centres. A number of small businesses can come together to create a centre for their employees' children and for other children in the

community. Large businesses can also do this. In urban areas, most families should be able to walk to a local early child development and parenting program. In rural and isolated areas, additional resources may be needed for transportation, and some program components may be delivered through home visits as part of a network of mobile vans.

Staff

Competent early child development program staff are crucial to implementing programs which are sensitive to the needs of young children and their families in the child-oriented part of the centres. There must be enough competent early child development staff to ensure children's needs are met and to support parents in the program. A competent early child development staff person is able to:

- 146) establish a partnership with parents that supports their responsibilities to their children;
- 147) plan play-based problem-solving activities that promote optimal brain development to establish coping and social skills and other competencies;
- 148) promote the crucial early base for literacy, numeracy and science learning through the children's language and play experiences and promote development of positive behaviour and good social skills;
- 149) ensure that the environment and daily care-giving practices protect children's health, nutrition, safety and well-being;
- 150) develop a responsive relationship with individual children and with the group; respect family and ethno-cultural diversity and the multitude of strengths available to each child;
- 151) identify problems and difficulties early and provide or connect to appropriate early interventions;
- 152) facilitate adult learning and parenting capacity; and
- 153) work with others in the community to support children's well-being.

The participation of parents, other family members, and caregivers is guided by the early child development staff. In turn, they are able to transfer their understanding and knowledge to other parents and caregivers.

Other specialized staff will work in collaboration with early child development staff to meet the needs of young children and their families. In some instances, participating parents may become associate staff members.

NAVIGATING THE COURSE BETWEEN VISION AND IMPLEMENTATION

The present early child development and parenting initiatives involve a collection of services and programs for young children and their families - including junior and senior kindergarten programs, nursery schools, child care centres, family child care, family resource programs, parenting and family literacy centres, drop-in and playgroups, prenatal/postnatal support groups, home visiting, and early intervention programs. The Early Years Reference Group believes that these initiatives

should be expanded when necessary and integrated into early child development and parenting centres in communities that will benefit Ontario's young children from conception to age six and their parents.

Leadership and Partnerships

The creation of centres sensitive to the diverse characteristics and needs of today will be, to a considerable extent, dependent on the creative leadership of individuals and groups. Increasingly the leadership is referred to as social entrepreneurship. As reported in Chapter 5, we found a number of such leaders who had created early child development centres in a variety of communities. The leadership of these individuals within a framework for early child development and parenting centres will be important for communities to build a broad, high quality range of centres to meet the needs of families. We, again, emphasize that we are not proposing what some would call technical or bureaucratic leadership to establish the centres. Centres established through an authoritarian, bureaucratic structure run the risk of being insensitive to the needs, cultures, languages, religions and values of families with young children and the requirements for early child development. We believe that the leadership from social entrepreneurship will continue to be important in establishing sensitive, effective early child development and parenting centres.

A valuable source of support for communities in establishing the public and private sector support and understanding necessary to initiate and sustain early child development and parenting centres resides in a diverse group of organizations (foundations, advocacy and public education groups) that are strong advocates for improving the early years for Ontario's children. It will be important for these organizations to work cooperatively with the local authorities we are proposing to be established in communities. Because of their contacts and structures, these groups could be helpful in establishing centres for all sectors of society. They are also able to support the extra efforts that will be needed in ensuring children and communities with particular challenges are able to fully participate.

Community policing initiatives can be important partners in early child development centres. They have some understanding of the families and children who could benefit from the centres, as well as some officers may provide volunteer assistance in some communities. (This involves both municipal and provincial police services.)

Provincial government leadership will be required to create an understanding and framework for early child development and parenting centres. The role of establishing the provincial framework can best be done, we believe, by a provincial Minister who has the responsibility, the resources, and the mandate, to move the concept forward and build the necessary partnerships. The Minister should work within and outside government to establish a framework of understanding and strategy to develop the capacity at the community level to establish early child development and parenting centres sensitive to the needs of the community. We believe that all parts of society should be involved in and supportive of this concept. Therefore, the Province should encourage private sector and community participation and leadership, wherever possible.

Legislation and Standards

We also see the need for integrated legislation for programs that affect early child development and common standards for the new program. Currently, different parts of government programs that we include in the new early child development and parenting concept, operate under several different

Acts, including (but not limited to) the Day Nurseries Act, the Child and Family Services Act, and the Education Act. The Minister Responsible for Children should lead the consolidation process within government. There would be a provincial administrative framework and legislation, which would outline the common principles, standards, and funding mechanisms which are relevant to early child development and parenting centres. The Minister would require full authority within the provincial cabinet to put in place the legislation to initiate and implement the early child development and parenting program.

Principles and standards would ensure high quality environments for young children. The various current regulations should be reviewed and integrated to accommodate the new program and the needs of local communities. They would also set out monitoring requirements including the provisions for a readiness-to-learn measure to assess brain development in the early years at the community level.

We recognize there are a number of challenges involved in navigating from vision to implementation. We make some specific recommendations that involve next steps. However, we wish to clarify that there are some outstanding issues that will have to be resolved as the program evolves.

The Early Years Reference Group was not in a position to recommend a local "lead" for the new early child development and parenting program for communities in Ontario. The lead could be the upper-tier municipality, the school board, or another appropriate group. Identifying the best local partner should involve discussions with municipalities, school boards and other community organizations. The local lead would not have to be the deliverer of the program; it could purchase delivery from community-based organizations and groups and through leadership and incentives, help establish the additional capacity needed to meet the needs of the children in their communities.

Funding Mechanisms

Another challenge is identifying the exact funding mechanism that would be most appropriate. Currently, funding mechanisms cover the waterfront. There are programs that are fully publicly funded, like kindergarten. There are private child care programs that are totally funded by parent fees. There are subsidized child care programs. There are workplace sites that receive private sector financial contributions. We believe that whatever funding mechanisms are used, they should take into account the full range of public and private sector initiatives that currently exists.

Kindergarten programs are logically part of early child development. In the report we have separated the early child development and parenting tier from education. Thus, senior and junior kindergarten and the alternative Early Learning Grant should become part of the provincial government resource base to help build the integrated early child development and parenting program. There are initiatives in primary schools in parts of Ontario where principals and teachers have taken steps to create components of early child development and parenting centres. Most of these are examples of leadership outside of the school boards. They are outside the basic education policies and administration. These initiatives should become part of integrated community-based early child development and parenting centres as communities establish their local authorities for early child development and parenting centres.

We believe that, over time, the funding for senior and junior kindergarten and the Early Learning Grant should become part of the provincial government resource base for an integrated early child development and parenting program. However, as we make clear in our recommendations, we do not want to jeopardize kindergarten, the one program that is available across the province now for young children. The funding must be preserved. We are not suggesting there be fees for kindergarten. When early child development and parenting centres are more fully realized, the funding may be integrated.

Another consideration is the importance of involving other parts of society in this concept. The provincial base funding for early childhood and parenting programs could be amplified through municipal and federal funding, business investment and voluntary contributions. A range of tax incentives could help to ensure that local businesses and communities are sensitive to the needs of the centres and enlarge the pool of funding and resources to ensure that the centres have support from all sectors in the community and are available and accessible to all young children in communities.

Professional Issues

A provincial program of early child development and parenting centres must build on the current array of early years initiatives and the expertise that supports them. Since the brain develops in a seamless manner, it is problematic to segment early child development from primary school education. A goal could be to achieve the integration of early child development and parenting centres and the school system taking into account the roles of the different tiers. Junior and senior kindergarten programs, based on the principles of early child development and parenting and not more narrow, didactic educational goals, are well suited to be part of the later stages of early child development and parenting concept. Those that are more firmly based in prescriptive education curriculum (with a focus on skill acquisition rather than a developmental continuum) and do not involve parents, do not easily fit the concept for early child development.

Among the barriers to integration between early child development and the school system are issues of remuneration and staffing requirements. School teachers, at present, receive little education in early child development and how children learn in the early years. (It should be noted that we met many primary school teachers that do understand early child development and are in some districts frustrated by their school administrators. Some in the administration may be less knowledgeable or interested than these teachers.) Early childhood educators from quality programs are well-educated in how children learn in the early years. Long-term solutions are needed to resolve these potential problems. The training for early childhood educators and teachers is different. Early childhood education training programs are in colleges of applied arts and technology; teacher training is in university. Teaching salaries are considerably higher than average salaries for early childhood educators. Educator-to-student ratios in regulated child care centres are much lower than average teacher-to-student ratios in kindergarten classrooms.

Young children deserve the best-prepared staff to work with them. All those who work with young children and parents must understand the brain story and the relationship of play-based problem-solving learning to early brain development. The competencies that are required can be attained through different educational and experiential pathways. The linkages between college and university programs and among early childhood education and teacher education programs should be expanded to support the preparation of a highly competent early childhood workforce in Ontario. Building the staff expertise for a quality, accessible program for early child development and

parenting, will require, over time, appropriate recognition, clear career pathways and remuneration commensurate with the importance of early child development.

Some faculties of education (e.g. Faculty of Education and the Ontario Institute for Studies in Education at University of Toronto) are trying to prepare teachers with the skills and knowledge that will be required in early child development programs. Other post-secondary institutions are developing mechanisms to bridge (articulate) early childhood education graduates from colleges into undergraduate degree programs in university.

It would be a mistake for governments to lose the good early child development capability that exists in some junior and senior kindergartens. Integrating junior and senior kindergarten into early child development and parenting programs is fraught with complex turf and emotional conflicts. The integration of function can only be advanced with the full cooperation of all parties and sensitive leadership from the provincial government.

There are other staffing issues, including how to bring people with recreational expertise and training into the centres or link recreational programs to the centres and ensure that recreation staff are knowledgeable about early brain development and the importance of stimulation of the sensing pathways through play in the early years.

Integration with Other Initiatives and Programs

The Ontario government, through the Office of Integrated Services for Children, has recently launched two initiatives targeted towards children with difficulties - Healthy Babies, Healthy Children and the Pre-school Speech and Language Program. Healthy Babies, Healthy Children provides a base from which to expand home visiting and community networks. It also offers a unique opportunity to study the impact of varied staffing models for home visiting. As part of an early child development and parenting centre, home visiting increases its potential ability to link isolated parents and their children with other supports. The inclusion of speech and language programs within early child development and parenting centres offers links with specialized services for children experiencing communication difficulties.

There are many initiatives that may be helping to support families with young children, but they are not part of a comprehensive system that is convenient and accessible for families in their own communities. Integration offers the opportunity to link a variety of supports and make the most of available resources in a community.

Where new national initiatives are anticipated, they should be negotiated within an overarching provincial framework of principles and services necessary for the early child development and parenting program.

OTHER COMPONENTS OF AN EARLY CHILD DEVELOPMENT AND PARENTING FRAMEWORK

Other components that could support early child development and parenting include:

154) Increased parental and maternity leave and benefits;

-
- 155) Family-friendly workplaces;
 - 156) Tax incentives;
 - 157) An integrated, independent measurement; and
 - 158) Community information networks.

Increased Parental and Maternity Leave and Benefits

Maternity leave benefits protect and promote the health and well-being of the mother and her unborn and newborn child. It is, of course, only available to women. Parental leave benefits give either parent an opportunity to care for an infant or young child.

In Ontario, employment protection for maternity and parental leave arrangements are stipulated in the *Employment Standards Act*. Employees are entitled to 17 weeks maternity leave and 18 weeks parental leave. The federal *Employment Insurance Act* provides cash benefits for up to 15 weeks maternity leave and an additional 10 weeks for parental leave after a two-week unpaid waiting period, up to a maximum of 55% of their salary to a maximum of \$413/week. The maternity and parental benefits from Employment Insurance do not cover the majority of workers.

An increase in the current maternity and parental leave and benefits provisions will support healthy interactions between newborns and young infants and their adopted or biological mothers and fathers. During the crucial first year of brain development, babies will benefit from increased opportunities to be nurtured and stimulated by their parents (the parent-oriented period in Figure 6.1). Mothers will be more likely to breastfeed their infants for a longer time if they are able to stay at home longer with their new babies. The longer leave, combined with the support of early child development and parenting centres, could help establish the foundation for good parenting.

Family-Friendly Workplaces

Now that women with young children are an established and important part of the labour force, work arrangements are beginning to take into account the needs of parents with young children. A balance in work and family life allows parents some flexibility when they need it, particularly when children are in their early years. Family-friendly policies in the workplace help to bring about the work-family balance and allow parents more opportunity to support children's development during the crucial early years.

In addition to extended parental and maternity leave and benefits, possible options include:

- 159) Flexible work arrangements such as part-time work, flexible hours of work, priority for day-shifts and opportunities to work at home;
- 160) Unconditional paid leave days which can be used to attend to family responsibilities including the care of sick children;
- 161) Flexible use of employee payroll benefits for early child development; and

162) Workplace early child development and parenting centres.

These initiatives, although currently limited in their application in Ontario workplaces, do have the potential to benefit families and employers. Parents who are better able to meet family responsibilities are absent less and are more productive. The constant tension that many parents, particularly mothers, experience between meeting the needs of their young children and fulfilling work-related obligations creates stress levels that can lead to higher rates of absenteeism, work disruptions and expensive staff turnover.

Regular paid leave to allow parents to take part in their young children's programs is another example of a family-friendly work policy. Opportunities for parent participation in early child development and parenting centres is a crucial element of the vision we are proposing. Regularly scheduled parent participation (three or four hours each week) benefits children because the adult-child ratio can be reduced, without additional financial costs, and benefits parents who are able to learn from early child development staff and from each other about how best to provide optimal nurturing and stimulation.

Parent participation leave can be promoted by the development of bargaining arrangements for union-employer contracts. Some model contract language has already been developed. A background study on *Policy Instruments for Early Child Development*, done for the Early Years Study, discusses issues related to maternity/parental benefits and family-friendly workplaces.

Tax Incentives

The background study on *Policy Instruments for Early Child Development* also sets out a whole range of options focusing on:

- 163) Cost-sharing between the public and private sectors through tax and expenditure systems;
- 164) Encouraging wide-scale private sector buy-in for the financing of early child development initiatives; and
- 165) Promoting community innovation.

The background study was commissioned to look at a variety of options. The Early Years Reference Group has selected some of them to recommend to the Ontario government. In addition to improvements in maternity/parental and family leave (discussed in the previous section), we are particularly interested in the potential of engaging the private sector and community groups in the task of developing early child development and parenting centres across Ontario.

We hope and expect that private sector and community involvement and investment will expand and enrich the possible range of options available to families. It is also important in respect to early child development to reduce the social distance or disparity between those at the top of the socio-economic ladder and those at the bottom. Involving all sectors of society in building the new system will help to build a sense of common purpose and community commitment and involvement (sometimes called social capital or social cohesion) and to spread the word about the vital importance of the early years of brain development.

The Ontario government has already taken steps to encourage private sector capital contributions through the Workplace Child Care Tax Deduction. We propose that the Ontario government, which controls its own corporate tax program, go further and introduce a tax credit to be used against either income or capital taxes as an incentive to increase corporate spending for on-site or offsite early child development and parenting centres available to their own workforce and, when feasible, to others in the community.

To support social entrepreneurship leaders and promote public-private partnerships and encourage community-driven innovation, we also support creation of a social entrepreneurship trust fund. To quote the background study on policy instruments: "just as venture capital encourages risk-taking and innovation with significant long-term payoffs for investors and the economy, a social entrepreneurship fund could serve the same role in providing the seed capital for new ECD [early child development] ventures with the potential for significant longer-term payoffs for the economy and society at large. Since the payoffs are difficult to capture by private investors, government subsidies are needed and warranted." There are a number of suggestions in the background study for ways in which this fund could be financed, including other forms of private contribution.

One strategy would be to have the Trillium Foundation that has funded what could be called social entrepreneurship in the past, make this a major part of its mandate. Private foundations, such as the Atkinson Foundation, have made the support of community initiatives to build early child development programs a priority.

Outcome Measures

In Chapter 3, we made the case for development of outcome measures for early child development linked to health and learning. We are urging Ontario to introduce readiness to learn, birthweight and immunization rates at age two as outcome measures for the early years. We argue for an independent institutional structure to develop and apply outcome measures for early child development, linked to health data for children and the larger population and to school performance data.

We reiterate, for the sake of emphasis, that a readiness to learn measure will provide a useful estimate of brain development during the critical early years, but it is not suitable for predicting outcomes for individuals. Rather, used as a population-based assessment, it will show regions or communities where early child development is not as good as it should be. It has value in relation to subsequent learning, behaviour and health throughout the life cycle for the population. It will also help a community to assess whether efforts to improve the development of children in the early years in the region have improved outcomes.

Community-Based Information Networks

We have made the point that more people need to understand the brain story and the implications of early child development and parenting for learning, behaviour and health over the life cycle. We have also talked about the involvement of community-based organizations in initiatives to support young children and parents. We believe that community-based information networks have the potential not only to increase public understanding, but also to promote information-sharing among groups involved in early child development and parenting initiatives.

Computer networks are growing in all areas of society. There are several networks linking community organizations involved in early child development projects (e.g. Better Beginnings, Better Futures). There is an emerging provincial network (CPNet) involving community policing, health and other community-based organizations to share information and ideas and promote cooperation. This could be used to establish a community information network that could be valuable for learning and exchange of information among communities and their various centres.

As well, many communities have information centres that provide information on community services and resources to parents looking for help. Some communities have established special parent "help" telephone services.

There is enormous potential for information networks to be expanded, improved and integrated in Ontario. There is an excellent base on which to build in the expertise, experience and goodwill in the current initiatives.

FIRST STEPS

The Premier must make a public commitment to a framework of support for an early child development and parenting program and ensure that the Minister Responsible for Children has a strong voice around the Cabinet table.

Since the Minister Responsible for Children will have the responsibility for the transition to an early child development and parenting framework, it is important that the Minister have a strong Deputy Minister and staff to help develop the initiatives and policies, internal and external to government.

To build on the strengths and diversities of Ontario's communities, we propose that the Minister Responsible for Children establish Task Groups to study the implementation and recommend the next steps on issues such as the:

- 166) Creation of local authorities for early child development and parenting centres;
- 167) Private and public sector partnerships involved in setting up and operating centres;
- 168) Development of strategies to integrate existing provincial government programs with funding from other government and private sources;
- 169) Integration of separate provincial legislation to create common standards and funding mechanisms for early child development and parenting centres, including the merging of kindergarten and regulated child care resources as the financial base; and
- 170) Interface between education and early child development and parenting centres.

What we are proposing is a fundamental change for the support of families with young children in Ontario. We believe such an important change in how we as a society cope with a very fundamental problem in a period of major socio-economic changes, cannot be done by conventional government processes. It will only develop if the government can find creative ways to work with its citizens and communities to establish early years programs which are sensitive to diverse family and community needs.

We must emphasize, as other jurisdictions have pointed out, such change requires:

- 171) A delicate balance among governments and communities;
- 172) Recognition that views within communities will, in all likelihood, be different between communities and from that of the provincial government;
- 173) Sensitive leadership, recognition and co-ordination to involve public and private sector;
- 174) Clear principles for early child development and parenting centres, but multiple strategies with a universal outcome measure to ensure all of Ontario's children benefit; and
- 175) An understanding that to do all of this will take time.

IN CONCLUSION:

- ◆ Society's support for early child development is dependent on the understanding and appreciation among all members of society of the fundamental importance of the early period of human development. To improve the outcomes for all children in their early years, there has to be a willingness to create and support the development and operation of early child development and parenting centres. The involvement of the different sectors of society, both public and private, is crucial for creating the centres and to help build what has been described as social capital or social cohesion, which is thought to be a key factor in long-term economic growth and the maintenance of tolerant democratic societies.
- ◆ We also recognize that early child development and parenting centres have to be sensitive to cultural, ethnic, linguistic and other characteristics of communities and families, to all children's needs and abilities, and should be located in diverse sites, ranging from homes to schools or business properties. The development of a range of centres to provide diverse choices cannot be done on a centralized, bureaucratic model. Therefore, we have adopted the concept of community-based development of early child development and parenting centres, involving the private sector as well as the public sector. In many ways this is similar to how we have developed the post-secondary education system rather than the education system.
- ◆ Centres should be available, accessible, affordable and optional for parents from all sectors of society. The program should promote equal opportunity for optimal development for all children in the early years. Development of the new program will require a realignment of existing initiatives along a continuum.
- ◆ The whole system that we envision includes:
 - i. Early child development and parenting centres in communities, involving the public and private sectors;
 - ii. Improved maternity/parental leave benefits for parents;
 - iii. Family-friendly workplaces;
 - iv. Tax incentives for development of new centres in communities;

-
- v. An integrated, independent outcome measure of human development; and
 - vi. A network for community information sharing.
 - ◆ What we envision will be a first "tier" system for children, as important as the elementary and secondary school system and the post-secondary education system. The system should consist of community-based centres, operating at the local level within a provincial framework.

CHAPTER 7

RECOMMENDATIONS

Our recommendations are based on:

- 176) The recognition that the early years of child development set the stage for learning, behaviour and health throughout the life cycle;
- 177) An understanding of what works to enhance support for young children and their families to improve children's outcomes in all sectors of society; and
- 178) The belief that leadership today by the Premier, the Minister Responsible for Children, and the government, will create a legacy that will be recognized 20 years from now as a crucial step in building a high quality population for the next century through strong support for early child development and parenting.

RECOMMENDATION 1

Given all that is now understood about the vital importance of the early years, the growing numbers of community initiatives and the steps already taken by the current government, we urge the Premier and Government of Ontario to:

- ◆ Commit to making early child development a high public priority.

Performance measure: The Premier, in written and verbal communications and meetings, inside and outside the Legislature, fulfils this recommendation in 1999.

- ◆ Ensure that investment in early child development and parenting is a priority in provincial public resources.

Performance measure: Evidence of increased public funding invested in early child development and parenting, starting in 1999.

- ◆ Encourage the private sector to give priority to early child development and parenting as an investment in healthy communities and Ontario's future workforce.

Performance measure: Evidence of increased private funding invested in early child development and parenting, starting in 1999.

- ◆ Lead a campaign to build public awareness and understanding of the early years as a foundation for lifelong learning, behaviour and health.

Performance measure: During 1999, identify and implement elements of this campaign. Evaluate its effectiveness.

-
- ◆ Host a province-wide meeting involving groups in communities that have shown leadership and have built capacity to support early child development and parenting.

Performance measure: During 1999, hold the first session.

- ◆ Establish a provincial communications network to allow community groups to keep in contact with each other and to provide a source of information and networking opportunities for interested parents.

Performance measure: Have the network in place in 2000.

Rationale: Ontario needs leadership and long-term commitment on early child development. We are coming to a period when the budget will be balanced. If the commitment is made now to give priority to the early years, we could expect all governments to honour it. A public awareness campaign is needed to tell all members of society why the early years are so crucial, why they should be a high priority for the public and private sectors, and what each of us can do in our communities to make them more supportive of parents and young children. Networking is a way for communities to help each other by sharing what they have learned; it can also benefit parents. (The CPNet could be used as a base for this.)

RECOMMENDATION 2

To ensure there is a strong voice around the Cabinet table for early child development issues, and to ensure there is a provincial Minister with the responsibility for leading the development of the early child development and parenting program across Ontario, we urge the Premier to give the Minister Responsible for Children a strong mandate and the resources to:

- ◆ Create Task Groups to report to the Minister on the framework for an early child development and parenting program for all Ontario children up to age six, that will operate under appropriate integrated provincial legislation, with specified funding arrangements, with local delivery guided by a common set of principles;
- ◆ Appoint a senior Deputy Minister to support the Minister's external and internal government initiatives in establishing the framework;
- ◆ Liaise with the federal government through the National Children's Agenda process to integrate the efforts of both levels of government within the provincial framework;
- ◆ Liaise with municipal governments, which have major financial and/or management responsibilities for child care, prenatal programs, Healthy Babies, Healthy Children, family resource centres, parks and recreation programs for children;
- ◆ Establish the process for setting the standards and for determining the administration, monitoring and delivery of early child development and parenting programs;
- ◆ Ensure appropriate outcome measures are in place; and

-
- ◆ Facilitate the development of capacity at the community level to establish early child development and parenting centres.

Performance measure: An integrated continuum of early child development and parenting centres to serve all Ontario children should be in place within five years (by the end of 2004).

Rationale: Because of the fundamental importance of the early years for competence and coping throughout the life cycle and the fact that many ministries affect early childhood, early child development must have as strong a voice in government as economics, health, education and environment.

We view the development of the early child development and parenting system as evolutionary. It is important that Ontario build on what exists and is working well in communities now, and support expansion of community initiatives, as the details of provincial and local authority for management of the system are worked out, with all the parties involved.

Ontario currently has a patchwork of services. Some parents have wonderful services available to them, while others have little or nothing that is accessible or affordable. We must ensure that there is a basic level of service available everywhere. Integrated legislation and appropriate funding could, under provincial leadership, overcome major barriers to collaboration at the community level. We are not recommending everything across the province has to be homogenized. But there has to be an umbrella under which early child development and parenting centres can be integrated into a system that overcomes existing jurisdictional and other barriers.

For example, there are currently interministerial and intergovernmental barriers to be overcome, in the best interests of the children.

Creation of early child development centres will require new resources. If the province is serious about making the early years a high public priority and making early child development a high priority for reinvestment dollars that can be made available, it should be possible to build a new system, with communities and the private sector, not in a single year, but in a reasonable and planned timeframe.

Location of programs may depend on local community resources and conditions. Schools are logical sites, but there will also be early child development and parenting centres in community centres, recreation sites, churches, workplaces and other sites. Rural and isolated areas may have to evolve suitable arrangements for transportation. Some program components may be delivered through home-based early child development centres that are linked to an early child development and parenting centre (hub and spoke concept). There could also be a mobile network of service delivery, which includes home visits to families.

RECOMMENDATION 3

Given that some form of local authority will be required to administer the integrated early child development and parenting program in communities, and given that there should be participation by all levels of government and the private sector, the Minister Responsible for Children should, with the advice and assistance of the Task Groups, explore the relative merit of upper-tier municipal governments, school boards, or other local arrangements as possible lead local bodies. This would be done with a view to identifying the lead organization in every community in Ontario for the purpose of local coordination, purchase of service, and partnership development.

Performance measure: The lead local body in some communities should be identified by 2000.

Rationale: In a province as large and diverse as Ontario, it is simply not practical to have a provincial Ministry managing the early child development and parenting centres from Queen's Park. There needs to be some kind of local organization.

RECOMMENDATION 4

Given the need to bridge the barrier s between the early years and the public school system, and given the importance of school sites as a public resource in communities with easy access for many families and as a good site for early child development and parenting centres, we urge government, school boards and communities to:

- ◆ Keep schools sites available that are a potential location for early child development and parenting centres;
- ◆ Establish policies and support to make school facilities available to communities so that parents and children everywhere can use the facilities the taxpayers have already paid for to ensure early child development and parenting centres can operate in the evenings and on weekends, as well as daytime; and
- ◆ Establish incentives to encourage location of early child development and parenting centres on school sites as one of the potential community locations for these programs.

Performance measure: Action should be taken as soon as possible because some of the changes in education may lead to the loss of early child development and parenting centres in schools and inhibit the development of new centres on school sites.

Rationale: It is important that short-term decisions not stand in the way of the longer-term development of a system of early child development and parenting centres and prevent these programs from appropriate integration with the school system. We heard from many people that the schools are central resources in neighbourhoods. Schools are more than places where children go to class. They are public resources, with playgrounds, libraries, gymnasiums and swimming pools that the taxpayers have paid for. They are a rich resource for the early child development programs that we consider essential for the future of Ontario. Schools should be open for use by families on evenings and weekends. The idea of the "community school" is not new, but it is one that seems to

have gotten lost along the way. Resources should be mobilized to support use of school facilities as early child development and parenting centres outside classroom hours to meet the needs of parents, including those who work shifts.

RECOMMENDATION 5

Given that kindergarten is the only universal program offered to all Ontario children up to age six today, and given its significance as part of our proposed early child development and parenting program, we urge the government and school boards to:

- ◆ Continue funding and support for existing (full-day and part-day) kindergarten programs and develop strategies with communities to make kindergarten part of the early child development and parenting centre framework as soon as possible.

Performance measure: A commitment should be made in 1999 to continue funding and support before any school boards close kindergarten classrooms for funding reasons.

- ◆ Ensure that the Early Learning Grants for alternatives to Junior Kindergarten are used only for programs for children under age six, rather than throughout the primary school grades.

Performance measure: Policy directing use of Early Learning Grants to alternatives to junior kindergarten should be clarified as soon as possible. The need is immediate if Ontario is to maintain, expand and create early child development and parenting centres in communities.

- ◆ Work with the community body responsible for developing and implementing early child development and parenting centres to incorporate the present kindergarten programs into early child development and parenting centres.

Performance measure: Steps to achieve this goal should be initiated in 2000.

Rationale: If we are going to build a continuum of supports for early child development, we must not lose the resources that are already there and part of the base for future development. We heard concerns that some junior kindergartens may be closed by school boards, and that some full-day programs may be changed to half-day for funding reasons (especially from the Francophone education representatives). Part-day programs are hard on children and their parents, who have to juggle arrangements unless there are other components of early child development in the school. There is also concern that Early Learning Grants are being used in the primary grades, rather than for early child development.

These recommendations must not be interpreted as ones that suggest the Ministry of Education and Training should assume the responsibility for the establishment of early child development and parenting centres during the transition period. The recommendations are set out to ensure that this publicly-financed sector resource is sustained in communities to help build the full spectrum of early child development and parenting centres.

We agree with concerns expressed about the new kindergarten program - that, in some places, it may be too concentrated on didactic instruction and does not give enough emphasis to play-based

problem-solving learning. We believe the time is appropriate for enhancing the synergy between integrated early child development initiatives and the primary school system.

RECOMMENDATION 6

To ensure that professionals who work with children are aware of the new knowledge about early child development and learning, and that new professional training programs are developed that reflect this new knowledge:

- ◆ Government, in cooperation with the Ontario College of Teachers, the Faculties of Education and the Early Childhood Education programs of the Ontario Colleges of Applied Arts and Technology, should take steps to ensure that training for current and new teachers and early childhood educators includes the new understanding from neuroscience and early child development and learning;
- ◆ Post-secondary education institutions should develop articulation agreements between faculties of education (which train teachers) and colleges of applied arts and technology programs (which train early childhood educators) and should develop new programs for training in early child development that bridge both professional worlds;
- ◆ The government should consider establishing a task force to recommend how these professional bridges can best be built;
- ◆ Post-secondary education institutions should assume responsibility for integrating key information about human development, the brain and the early years into the social sciences including economics, the life sciences, the business schools, and professional educational programs (e.g. engineering, medical and nursing schools and recreation programs); and
- ◆ Professional bodies that provide in-service training for teachers, the early childhood education workforce, and other professionals who work with young children should develop programs to inform their membership.

Performance measure: Steps should be taken in 1999 to develop information packages and training programs and articulation agreements. There should be evidence of change within three years.

Rationale: In our discussion with many groups, it became clear that many professionals have only a limited understanding of the importance of the early years for brain development and for learning in the school system. Some faculties of education have taken steps to develop appropriate curriculum for early child development for teacher training.

It is important for the longer-term to provide opportunities for primary school teachers and early childhood educators to receive cross-training to facilitate a smooth transition for children through the early child development continuum.

Many professionals (including some physicians and educators) are not aware of the new knowledge about brain development and its implications for learning, behaviour and health, and therefore may

tell parents to wait and see, sometimes missing the best chance of helping the child during a critical period of development. Primary care physicians, paediatricians and community-based nurses are in an ideal position to advise pregnant women and families with young children on how to find early child development and parenting centres and why early child development is so important.

RECOMMENDATION 7

To ensure that the knowledge about human development becomes widespread:

- ◆ The government, in cooperation with elementary, secondary and post-secondary educators in Ontario, should introduce a curriculum on human development, within a broad socio-economic context, that is included in high schools across Ontario, as well as in all post-secondary education programs.

Performance measure: Set a five-year timetable for this new understanding about the early years and development to become embedded in the education system.

Rationale: An understanding of how human beings develop should be basic knowledge for everyone who goes through the school system. Putting human development into the curriculum will give young people greater understanding of the importance of early child development and its consequences and their future role as parents. It also could lead to a better-informed society.

RECOMMENDATION 8

To enhance parenting support, the Ontario government should consider:

- ◆ Negotiating with the federal government to eliminate the two-week waiting period for Employment Insurance benefits for maternity leave;
- ◆ Negotiating with the federal government to extend the maximum coverage of maternity/parental benefits from 25 weeks to one year;
- ◆ Extending statutory protection for maternity/ parental leave up to one year and guaranteeing five days of paid family leave per year under the Employment Standards Act of Ontario; and
- ◆ Topping-up maternity benefits for low-income parents.

Performance measure: Set a five-year timetable for implementation.

- ◆ Monitor the impact.

Rationale: Some parents who want to stay home longer than the existing maternity leave can't afford to do so. Working parents who have paid into the EI fund should be able to use it when they need it. Low-income parents, in particular, find the two-week waiting period financially difficult. Some cannot afford to take much maternity leave because the benefit they get, based on their earnings, is so low. Extending maternity and parental leaves and benefits will increase the

likelihood that women will be able to stay home longer after the birth of a child. Unfortunately, improving provisions of Employment Insurance will only benefit a minority of the families participating in the labour force. We also need strategies to benefit families who are not eligible for EI benefits.

In addition, family leave is an important protection for parents in the workforce.

RECOMMENDATION 9

The Ontario government should establish further incentives to build public-private sector participation in early child development and parenting centres throughout Ontario, sensitive to the needs of parents with young children and their places of work. Among those to be considered are the following :

- ◆ In addition to the current tax credit for capital costs, create a tax credit for businesses (large and small) to contribute resources to family support and early child development and parenting centres for the use of their employees and the community.

Performance measure: Include in the 2000 Budget.

- ◆ Establish incentives for the development of family-friendly workplaces.

Performance measure: Include in the Budget of 2000.

- ◆ Create a Social Entrepreneurs Registered Investment Fund for community initiatives to build early child development and parenting centres at the local level.

Performance measure: Include in the 2000 Budget.

- ◆ Ask the federal government to review the extent to which the income tax system supports parents.

Performance measure: This should be done in 2000.

Rationale: Incentives to build collaboration and partnership between the business and community initiatives at the local level can help build understanding about the importance of early child development and improve social trust and cohesion at the same time as programs for the early years are enriched with additional resources. In view of the growing numbers of women in the workforce, early child development and parenting must have the understanding and, where possible, the support of business.

RECOMMENDATION 10

To monitor the effectiveness of parenting and early child development initiatives, the province should:

- ◆ Introduce, in consultation with communities, a "readiness to learn" measure for children entering school that provides information at the community level on how well children are doing.

Performance measure: Introduce and implement the first stage with selected communities in 1999.

- ◆ Develop a provincial measurement and monitoring capacity for existing administrative records and the readiness to learn measure to track human development and health throughout the life cycle.

Performance measure: Implement over three years.

- ◆ Establish an independent, non-political body, with academic affiliation, to conduct the measurements and do the necessary analysis on readiness to learn and other human development and health indicators (e.g. birthweight, age two immunization rates).

Performance measure: Implement over three years.

Rationale: A "readiness to learn" measure is already being piloted in Ontario. It will tell us how groups of children are doing now and it will allow us to track the outcomes of the early child development programs. It should be emphasized that the "readiness to learn" measure cannot be used to label or identify individual children. It is useful only at the population level. Communities will have a measure of how effective their early child development programs are. The measure will show which communities could benefit from strengthening their early child development and parenting capabilities and which communities are on the right track.

- ◆ The provincial measurement capacity will enable Ontario to measure child development, health and social indicators on a population basis throughout the life cycle. Birthweights and age-two immunizations are an example of data that should be part of the measurement system.

RECOMMENDATION 11

To encourage non-partisan support for early child development and to monitor progress in making early child development a real priority, we urge the Premier to:

- ◆ Ask for all-party support in the Legislature for making early child development a high priority and giving it high priority on provincial resources; and
- ◆ Reconvene the Early Years Reference Group early in the year 2000 to assess how far Ontario has come in implementing these recommendations.

Performance measure: Achieve all-party support in 1999. Reference Group should report in 2000.

Rationale: Too often, political parties reject initiatives because they are seen as belonging to another party. We do not want development of the early child development and parenting system to be lost because of partisanship. We also have a keen interest in following up on what we have recommended.

A FINAL NOTE

Our recommendations reflect these directions and endeavour to move Ontario towards a holistic approach to early child development and parenting. We concur with the conclusions of the World Bank:

"Because learning begins at birth, and even before, the starting point for involving families in early child development programs must be as early as possible... Knowledge and understanding of programs is no longer the constraint facing early child development. Rather, transforming this knowledge into action is the major limiting factor in implementing early child development programs and requires the combined support of governments, non-government organizations, the private sector and the media. The challenge to care for society's youngest members is not just a challenge for a single country or continent; it is a challenge for the entire world community." 153

<p>We have the new knowledge. We have the community models. We need leadership and commitment. The time could not be better for Ontario to act.</p>

REFERENCES

1. Rakic, P. (1996) "Development of the cerebral cortex in human and non-human primates" In M. Lewis (Ed) *Child and Adult Psychiatry. A Comprehensive Textbook*. Second Edition. Williams & Wilkins: 9 – 30
2. Shore, R. (1997) *Rethinking the Brain*. New York: Families and Work Institute, p.20
3. Shore, R. (1997) p. 18
4. Hubel, D. (1963) "The visual cortex of the brain" *Scientific American*, December 1963, as quoted in B. McEwen, & H. Schmeck, (1994) *The Hostage Brain*. New York: The Rockefeller University Press
5. Wiesel, T. N. & Hubel, D. H. (1963) "Single cell response in striate cortex of kittens deprived of vision in one eye" *Journal of Neurophysiology* 26: 1003 – 1017
6. Wiesel, T. (1982) "Postnatal development of the visual cortex and the influence of environment." *Nature* 299: 583 - 592 as quoted in B. McEwen, & H. Schmeck, (1994) *The Hostage Brain*. New York: The Rockefeller University Press
7. McEwen, B. & Schmeck, H. (1994) *The Hostage Brain*. New York: The Rockefeller University Press.
8. Perry, B. (1997) "Memories in fears: How the brain stores and retrieves physiologic states, feelings, behaviors and thoughts from traumatic events". In J. Goodwin and R. Attias (Eds.) *Images of the Body in Trama* Basic Books
9. Brunjes, P.C. (1994) "Unilateral naris closure and olfactory system development" *Brain Research Reviews* 19: 146 – 60
10. Cyander, M. & Frost, B. (1999) " Mechanisms of brain development: Neuronal sculpting by the physical and social environment" In D. Keating & C. Hertzman (Eds.) *Developmental Health and the Wealth of Nations*. New York: Guilford Press p. 179
11. Doherty, G. (1997) *Zero to Six: the Basis for School Readiness* Applied Research Branch R – 97 - 8E Ottawa: Human Resources Development Canada
12. McEwen, B. (1998) "Protective and damaging effects of stress mediators" *New England Journal of Medicine*, Vol. 338 No. 3: 171 – 179
13. Meaney, M., Aitken, D., Berkel, C., Bhatnagar, S., & Sapolsky, R. (1988) "Effect of neonatal handling on age-related impairments associated with the hippocampus": *Science* Vol. 239: 766 - 768.
14. Francis, D., Diorio, J., Paplante, P., Weaver, S., Seckl, J., & Meaney, M. (1996): "The role of early environmental events in regulating neuroendocrine development". *Annals New York Academy of Sciences* 794 (Sept 20) 1996: 136 – 152
15. Liu, D. Diorio, J., Tannenbaum, B., Caldji, C., Francis, D., Freedman, A., Sharma, S., Pearson, D., Plotsky, & Meaney, J. (1997) "Maternal care, hippocampal glucocorticoid receptors, and hypothalamic-pituitary-adrenal responses to stress" *Science* Vol. 277 12 September 1997. 1659 – 1662
16. Cynader, M. & Frost, B. (1999) p. 183
17. Gunner, M.R. (1998). "Stress physiology, health and behavioral development." In A. Thornton (Ed.) *The well being of children and families: Research and data needs*. Institute for Social Research Report. University of Michigan
18. Diamond, M. (1967) "Extensive cortical depth measurements and neuron size increases in the cortex of environmentally enriched rats" *Journal of Comparative Neurology* 131: 357 - 364
19. Chiriboga, C., Brust, J., Bateman, D. & W.A. Hauser (1999) "Dose-response effect of fetal cocaine exposure on newborn neurologic function" *Pediatrics* 1999; 103: 79 - 85

-
20. Arendt, R., Angelopoulos, J., Salvator, A. & Singer, L. (1999) "Motor development of cocaine-exposed children at age two years" *Pediatrics* 1999; 103: 86 - 92
 21. Mayes, L., Bornstein, M., Chawarska, M.A. & Granger, R. (1995) "Information Processing and Developmental Assessments in 3-Month-Old Infants Exposed Prenatally to Cocaine" *Pediatrics* Vol. 95 No. 4 April 93: 539 - 545
 22. McEwen, B., & Schmeck, H. (1994) p. 187
 23. Perry, B. (1996) "Neurodevelopmental adaptations to violence: How children survive the intragenerational vortex of violence" *In Violence and Childhood Trauma: Understanding and Responding to the Effects of Violence on Young Children* Cleveland: Gund Foundation
 24. Perry, B. (1996) "Incubated in terror: Neurodevelopmental factors in the 'cycle of violence'". In J.D. Osofsky, (Ed.) *Children, Youth and Violence: Searching for Solutions*. New York: Guilford Press
 25. Tremblay, R. (1999) "When children's social development fails." In D. Keating & C. Hertzman (Ed) *Developmental Health and the Wealth of Nations*. New York: Guilford Press: 55 - 71
 26. Tremblay, R., Pihl, R., Vitaro, F., & Dobkin, P. (1994) "Predicting early onset of male antisocial behavior from preschool behavior" *Archives of General Psychiatry*. 1994; 51: 732 - 739
 27. Rutter, M., Giller, H., & Hagell, A. (1998) *Antisocial Behaviour by Young People* Cambridge: Cambridge University Press
 28. Rutter, M. et al (1998) p. 307
 29. Haapasalo, J., Tremblay, R., Boulerice, B., & Vitaro, F. (in press) "Predicting preadolescence delinquency, social withdrawal and school placement from kindergarten behavior: Person and variable approaches."
 30. Tremblay, R., Kurtz, L., Masse, L.C., Vitaro, F., & Phil, R.O., (1995) "A bimodal preventive intervention for disruptive kindergarten boys: Its impact through mid-adolescence" *Journal of Consulting and Clinical Psychology* 1995, Vol. 63. No. 4: 560 - 568
 31. Stattin, H. & Klackenberg-Larson, I. (1993) "Early Language and Intelligence Development and Their Relationship to Future Criminal Behaviour" *Journal of Abnormal Psychology*, Vol. 102, No. 3: 369 - 378
 32. Power, C. & Hertzman, C. (1997) "Social and biological pathways linking early life and adult disease" *British Medical Bulletin*, Volume 53 No.1: 210 - 221
 33. Maughan, B & McCarthy, G. (1997) "Childhood adversities and psychosocial disorders" *British Medical Bulletin*, Volume 53 No. 1: 156 – 169
 34. National Institute of Child Health and Human Development (1997) *The NICHD Study of Early Child Care*
 35. Doherty, G. (1996) *The Great Child Care Debate: The Long-Term Effects of Non-parental Child Care* Occasional Paper No. 7. Toronto: The Childcare Resource & Research Unit, Centre for Urban and Community Studies, University of Toronto
 36. Carlson, M. & Felton, E. (in press) "Psychological and neuroendocrinological sequelae of early social deprivation in institutionalized children in Romania" *In Integrative Neurobiology of Affiliation*, Annals New York Academy of Science
 37. Spitz, R. (1945) "Hospitalism: An inquiry into the genesis of psychiatric conditions in early childhood" *Psychoanalytical Study Child* 2:53 -74 as quoted in Kandel, E. & Jessell, T. (1991) "Early experience and the fine tuning of synaptic connections". In E. Kandel, J. Schwartz, & T. Jessell (Eds.) *Principles of Neural Science* Third Edition. New York: Elsevier Science Publishing Co., Inc: 945 - 958
 38. Frank, D.; Perri, E.K.; Earls, F.; & Eisenberg, L. (1996) "Infants and young children in orphanages: One view from pediatrics and child psychiatry" *Pediatrics* 1996; 97: 569 - 578

-
39. Ames, E. et al (1997) *The Development of Romanian Orphanage Children Adopted to Canada*. Final Report. Burnaby: Simon Fraser University
 40. Werner, E. & Smith, R. (1992) *Overcoming the Odds: High Risk Children from Birth to Adulthood*. Ithaca and London: Cornell University Press
 41. Carnegie Corporation of New York (1994) *Starting Points: Meeting the Needs of Our Youngest Children*. New York p. 7 - 8
 42. Cynader M. & Frost, B. (1999) p. 166
 43. Central West Planning Information Network (1998) *The Mandatory Health Programs and Services in Ontario: Overview of the Research Literature on the Effectiveness of Public Health Interventions*. Hamilton
 44. da Silva, O. (1995) "Prevention of low birth weight/preterm birth" *The Canadian Guide to Preventative Health Care: The Canadian Task Force on the Periodic Health Examination*. Ottawa: Health Canada 38 - 50
 45. Mustard, C. & Roos, N. (1994) "The relationship of prenatal care and pregnancy complications to birthweight in Winnipeg, Canada" *American Journal of Public Health* September 1994, Vol.84, No. 9: 1450 - 1457
 46. Barker, D. (1998) *Mothers, Babies and Health in Later Life* Edinburgh: Churchill Livingstone as quoted in D. Acheson (1998) *Inequalities in Health* London: The Stationery Office
 47. Newman, J. (1995) "How breast milk protects new borns" *Scientific American* December 1995: 76 - 79
 48. American Academy of Pediatrics Work Group on Breastfeeding (1997) "Breastfeeding and the use of human milk" *Pediatrics* 1997; 100: 1035 - 1036
 49. Morley, R. & Lucas, A. (1997) "Nutrition and cognitive development" *British Medical Bulletin*, Volume 53 Number 1: 156 - 169
 50. Lucas, A., Morley, R. & Cole, T.J. (1998) "Randomised trial of early diet in preterm babies and later intelligence quotient" *British Medical Journal* November 1998; 317: 1481 - 1487
 51. Centre for International Statistics (1998) *A Profile of Children in Ontario* Ottawa
 52. Grantham-McGregor, S. M., Powell, C. A.; Walker, S.P., & Himes, J.H. (1991) "Nutritional supplementation, psychosocial stimulation, and mental development of stunted children: the Jamaican Study". *Lancet* 1991: 338: 1 - 5
 53. Tessier, R., Cristo, M., Velez, S., Charpak, N., & de Calume, Z.F. (in press) "Kangaroo mother care: Impact on mother-infant sensitivity and infant mental development" Accepted in *Pediatrics* Feb. 1998
 54. Acheson, D. (1998) *Independent Inquiry into Inequalities in Health Report*. November 1998. London: The Stationery Office p. 9
 55. Barker, D. (1992) *Fetal and Infant Origins of Adult Disease*. London: British Medical Journal
 56. Barker, D. (1997) "Fetal nutrition and cardiovascular disease in later life" *British Medical Bulletin*, Volume 53 Number 1: 96 - 108
 57. Power, C. & Hertzman, C. (in press, 1999) "Health, well-being and coping skills" In D. Keating & C. Hertzman (Eds.) *Developmental Health and the Wealth of Nations*. New York: Guilford Press: 41 - 54
 58. Campbell, F. & Ramey, C. (1994) "Effects of early intervention on intellectual and academic achievement: A follow-up study of children from low-income families" *Child Development* 65: 684 -698
 59. Wasek, B. Ramey, C. Bryant, D., et al. (1990) "A longitudinal study of two early intervention strategies: Project CARE," *Child Development*, Vol. 61: 1682 - 1696
 60. Schweinhart, L., Barnes, H. & Weikart, D. (1993) *Significant Benefits: The High/Scope Perry Preschool Study Through Age 27*. Monographs of the High Scope Educational Research Foundation Number Ten

-
61. Tremblay, R. E., & Craig, W. (1995) "Developmental crime prevention". In M. Tonry & D.P. Farrington (Eds.), *Building a Safer Society: Strategic Approaches to Crime Prevention*. Vol. 19 Chicago: The University of Chicago Press: 151 - 236
 62. Osburn, A. F., & Milbank, J. E. (1987) *The Effects of Early Education: A Report from the Child Health and Education Study*. Oxford: Clarendon Press
 63. Osburn & Milbank (1987) p. 213
 64. Andersson, B. (1992) "Effects of day-care on cognitive and socioemotional competence of thirteen year- old Swedish schoolchildren" *Child Development* 63: 20 - 36
 65. Currie, J., & Thomas, D. (1994) "Does Head Start Make a Difference?" *American Economics Review* 85: 34 - 64
 66. Lee, V., Brooks-Gunn, J., Schnur, E. & Liaw, F. (1990) "Are Head Start effects sustained? A longitudinal follow-up comparison of disadvantaged children attending Head Start, no preschool, and other preschool programs" *Child Development*, 61: 495 - 507
 67. Griffin, S., Case, R., & Siegler, R. (1994) "Rightstart: Providing the central conceptual prerequisites for first formal learning of arithmetic to students at risk for school failure". In K. McGilly (Ed.) *Classroom Lessons: Integrating Cognitive Theory and Classroom Practice*. MIT Press/Bradford Books
 68. Case, R., Griffin, S., & Kelly (1999) "Socioeconomic gradients in mathematical ability and their responsiveness to intervention during early childhood." In D. Keating & C. Hertzman (Eds.) *Developmental Health and the Wealth of Nations*. New York: Guilford Press: 125 - 149 as quoted in Case, R. & Mueller, M. (1999) *Differentiation, Integration, and Covariance Mapping as Fundamental Processes in Cognitive and Neurological Growth*. Toronto: University of Toronto
 69. Griffin, S. & Case, R. (1997) "Rethinking the primary school math curriculum: An approach based on cognitive science". *Issues in Education*, 3: 1 – 65 as quoted in Case, R. & Mueller, M (forthcoming) *Differentiation, Integration, and Covariance Mapping as Fundamental Processes in Cognitive and Neurological Growth*. Toronto: University of Toronto
 70. Case, R. & Mueller, M. (forthcoming) *Differentiation, Integration, and Covariance Mapping as Fundamental Processes in Cognitive and Neurological Growth*. Toronto: University of Toronto p. 21
 71. Bergmann, B. (forthcoming) *Saving Our Children From Poverty: What the United States Can Learn From France*. New York: Russell Sage Foundation
 72. Ministère de l'Éducation Nationale, "Durée de l'enseignement préscolaire et déroulement de la scolarité ultérieure, premiers résultats du panel 80," in *Note d'Information 82 - 09 du Services des Études Informatiques et Statistiques* Paris as quoted in Bergmann, B. (1996) *Saving Our Children From Poverty: What the United States Can Learn From France*. New York: Russell Sage Foundation
 73. Acheson, D. (1998) *Independent Inquiry into Inequalities in Health Report*. November 1998. London: The Stationery Office
 74. Zoritch, B. & Roberts, I. (1998) "The health and welfare effects of day care for pre-school children: A systematic review of randomised controlled trials." In *The Cochrane Database of Systematic Reviews*, (Ed.) *The Cochrane Library*, Issue 2, 1998. Oxford: Update Software (updated quarterly)
 75. Olds, D., Eckenrode, J., Henderson, C., Kitzman, H.; Powers, J., Cole, R., Sidora, K., Morris, P., Pettitt, L., & Luckey, D. (1997) "Long-term effects of home visitation on maternal life course and child abuse and neglect: Fifteen-year follow-up of a randomized trial" *Journal of American Medical Association*, August 27, 1997 - Vol. 278, No. 8: 637 -643

-
76. Olds, D., Henderson, C., Cole, R., Eckenrode, J., Kitzman, H., Luckey, D., Pettitt, L., Sidora, K., Morris, P., & Powers, J. (1998) "Long-term effects of nurse home visitation on children's criminal and antisocial behavior". *Journal of American Medical Association*, October 14, 1998. Vol. 260 No. 14: 1238 - 1244
 77. Suomi, S. (1997) "Early determinants of behaviour" *British Medical Bulletin* 53; No. 1: 170 - 184
 78. McKeown, T. (1976) *The Modern Rise of Population* New York: Academic Press. In Frank, J. & Mustard, J.F. (1994) "The determinants of health from a historical perspective" *Daedalus: Health and Wealth. Journal of the American Academy of Arts and Science*, Fall: 1-20
 79. Fogel, R., (1994) *Economic Growth, Population Theory, and Physiology: The Bearing of Long-term Processes on the Making of Economic Policy*. Working Paper No. 4638. Cambridge, Mass: National Bureau of Economic Research, Inc.
 80. Acheson, D. (1998) p. 9
 81. Sen, A. (1993) "The economics of life and death" *Scientific American* May 1993: 40 - 47
 82. Das Gupta, P. (1993) *An Inquiry into Well-Being and Destitution*. Oxford: Clarendon Press
 83. Fogel, R. (1994) p. 26
 - 84a. Helpman, E. (1998) *General Purpose Technologies and Economic Growth*. Cambridge, Mass: The MIT Press
 - 84b. Fortin, P. and Helpman, E. (1995) *Endogenous Innovation and Growth: Implications for Canada*. Occasional Paper No. 20 Industry Canada
 85. Organization for Economic Co-operation and Development (1998) *OECD Economic Surveys 1997-1998: Canada*. Paris: OECD
 86. Dahrendorf, R. (1995) "A precarious balance: Economic opportunity, civil society, and political liberty" *The Responsive Community* Vol. 5, Issue 3, Summer 1995 pages unnumbered
 87. Vanier Institute of the Family (1998) *From the Kitchen Table to the Boardroom Table* Ottawa
 88. Ontario Ministry of Finance, (1998) Figures made available to the Early Years Study
 89. Picot, G. & Myles, J. (1995) *Social Transfers, Changing Family Structure, and Low Income Among Children*. 11F0019MPE No. 82 Research Paper Series, Analytical Studies Branch. Ottawa: Statistics Canada
 90. Picot, G., & Myles, J. (in press) *Low Income Intensity Among Canadian Children, 1980 – 1996* Ottawa: Statistics Canada
 91. Brink, S. & Zeeman, A. (1997) *Measuring Social Well-Being: An Index of Social Health for Canada*. R-97-9E Ottawa: Applied Research Branch, Human Resources Development Canada
 92. Ontario Ministry of Community & Social Services, (1998) Figures made available to the Early Years Study
 93. Wolfson, M. & Murphy, B. (1998) " New views on inequality trends in Canada and the United States" *Monthly Labour Review* April 1998: 3 - 23
 94. "Economic growth: Explaining the mystery" *The Economist* January 4th, 1992: p. 18
 95. Vainer Institute of the Family (1994) *Profiling Canada's Families* Ottawa
 96. Chao, R. & Willms, J.D. (forthcoming) "The effects of parenting practices on children's outcomes". In J.D. Willms (Ed.) *Vulnerable Children*. Edmonton: University of Alberta Press
 97. Cook, C. & Willms, J.D. (forthcoming) "Balancing Work and Family Life". In J.D. Willms (Ed.) *Vulnerable Children*. Edmonton: University of Alberta Press
 98. Canadian Policy Research Network, 1996, as quoted in Chao, R. & Willms, J.D. (forthcoming) "The effects of parenting practices on children's outcomes". In J.D. Willms (Ed.) *Vulnerable Children*. Edmonton: University of Alberta Press
-

-
99. Statistics Canada (1995) *Survey of Work Arrangements* microdata as quoted in Vanier Institute of the Family (1998) *From the Kitchen Table to the Boardroom Table* Ottawa
 100. Frederick, J. (1992) "As time goes by ... Time use of Canadians" Statistics Canada, Cat. 89-544E. Based on 1992 General Social Survey. as quoted in Vanier Institute of the Family (1998) *From the Kitchen Table to the Boardroom Table* Ottawa
 101. Vanier Institute of the Family, p. i & ii
 102. *The Economist*, July 10, 1998, p. 10
 103. Macintyre, S. (1994) "Understanding the social patterning of health: the role of the social sciences" *Journal of Public Health Medicine* Vol. 16, No. 1: 53 - 59
 104. Roos, N. & Mustard, C. (1997) "Variation in health and health care use by socioeconomic status in Winnipeg, Canada: Does the system work well? Yes and no." *The Millbank Quarterly: A Journal of Public Health and Health Care Policy* Volume 75 Number 1, 1997: 89-111
 105. Keating, D. & Hertzman, C. (1999) (Eds.) *Developmental Health and the Wealth of Nations*. New York: Guilford Press
 106. Wilcox A. J. & Skjoerven, R. (1992) "Birthweight and perinatal mortality" *American Journal of Public Health* 83: 378 - 382
 107. Ross, N. & Wolfson, M. (1999) Analysis of Ontario 1991 Census Data and 1990 - 1992 Vital Statistics Data
 108. Willms, J. D. (1999) Analysis of NLSCY 1994 data
 109. Human Resources Development Canada & Statistics Canada (1996) *Growing Up in Canada: National Longitudinal Survey of Children and Youth*. Ottawa: Ministry of Industry
 110. Willms, J.D. (1996) "Indicators of mathematics achievement in Canadian elementary schools" in *Growing Up in Canada: National Longitudinal Survey of Children and Youth*. Ottawa: Ministry of Industry: 69 - 82
 111. Lapointe, A. E., Mead, N. A. & Phillips, G.W. (1989) *A World of Differences: An International Assessment of Mathematics and Science*. Princeton, N.J.: Educational Testing Service
 112. Council of Ministers of Education in Canada (1993) *School Achievement Indicators Program*. Toronto: CMEC
 113. Robitaille, D. F. & Garden, R. A. (Eds.) (1989) *The Study of Mathematics: Contexts and Outcomes of School Mathematics*. Elmsford, NY: Pergamon
 114. Ross, N., Wolfson, M., & EQAO (1999) Analysis of Ontario Grade 3 Test Results and Census Data.
 115. Ontario Provincial Police (1999) Figures made available to the Early Years Study.
 116. Willms, J. D. (1999) "Quality and inequality in children's literacy: The effects of families, schools and communities". In D. Keating & C. Hertzman (Eds.) *Developmental Health and the Wealth of Nations*. New York: Guilford Press: 72-93
 117. Willms, J.D. (1997) *Literacy Skills of Canadian Youth* Ottawa: Statistics Canada and Human Resources Development Canada
 118. Case, R., Griffin, S. & Kelly (1999) "Socioeconomic gradients in mathematical ability and their responsiveness to intervention during early childhood". In D. Keating & C. Hertzman (Eds.) *Developmental Health and the Wealth of Nations*. New York: Guilford Press: 126-149
 119. Fuchs, W. & Reklis, D. (1994) *Mathematical Achievement in Eighth Grade: Interstate and Racial Differences*. NBER Working Paper No. 4784
 120. Willms, J.D. (forthcoming) Editor. *Vulnerable Children*. Edmonton; University of Alberta Press
 121. Offord, D., Boyle, M., Szatmari, P., Rae-Grant, N., Links, P., Cadman, D., Byles, J., Crawford, J., Munroe-Blum, H., Bryne, C., Thomas, H., & Woodward, C.A. (1987) "Ontario Child Health Study". *Archives of General Psychiatry*, 44: 832 - 836

-
122. Willms, J.D. (1999) Unpublished analysis of NLSCY data
 123. Kohen, D. & Hertzman, C. (forthcoming) "The importance of quality child care" In J.D. Willms (Ed.) *Vulnerable Children in Canada*. Edmonton: University of Alberta Press
 124. Fellegi, I. (1998) Presentation at *Investing in Children* October 28, 1998. Ottawa.
 125. Baumrind, D. (1967) as quoted in Chao, R. & Willms, J. D. (forthcoming) "The effects of parenting practices on children's outcomes". In J. D. Willms (Ed.) *Vulnerable Children* Edmonton: University of Alberta
 126. Chao, R. & Willms, J.D. (forthcoming)
 127. Offord, D., Kraemer, H., Kazdin, A., Jensen, P., & Harrington, R. (1998) "Lowering the burden of suffering from child psychiatric disorder: Trade-offs among clinical, targeted and universal interventions". *Journal of American Academic Child and Adolescent Psychiatry*. 37:7. July 1998: 686 - 694
 128. Lipman, E., Offord, D., & Boyle, M. (1995) "What if we could eliminate child poverty? The theoretical effect on child psychosocial morbidity", *Social Psychiatry Epidemiology* 31: 303-307
 129. Keating, D. & Hertzman, C. (1999) "Modernity's paradox" In D. Keating & C. Hertzman (Eds.) *Developmental Health and the Wealth of Nations*. New York: Guilford Press pp. 9-11
 130. Manitoba Centre for Health Policy and Evaluation (1991) *Guidelines for Researchers*
 131. Smiths, H. (1999) *Literacy is More than Reading* Speech to the Empire Club of Canada, delivered by Sonja Smits, January 27, 1999. Toronto.
 132. Perry, B. (1996) *The Mismatch Between Opportunity and Investment* Chicago: CIVITAS Initiative
 133. National Center for Children in Poverty & Harvard Family Research Project (1997) *Starting Points: Challenging the "Quiet Crisis"*. p. 44
 134. Knitzer, J. & Page, S. (1998) *Map and Track: State Initiatives for Young Children and Families*. 1998 Edition. New York: National Center for Children in Poverty
 135. Oberhuemer, P. & Ulich, M. (1997) *Working with Young Children in Europe*. London: Paul Chapman Publishing, Ltd.
 136. Young, M. (1997) *Early Child Development: Investing in our Children's Future*. New York: Elsevier
 137. Bellamy, C. (1999) *The State of the World's Children*. New York: United Nations Children's Fund: UNICEF
 138. Vanier Institute of the Family (1998) p. 31
 139. Ekos Research Associates Inc. (1998) *Public Views on Child Care in Ontario: Final Report*. Toronto: author
 140. School for Social Entrepreneurs in London (1998) Information brochure
 141. Beach, J. (1993) Work-related child care in context: A study of work-related child care in Canada. Occasional Paper No. 3. Toronto, ON: *Childcare Resource and Research Unit*
 142. *Fortune* January 1999
 143. Lewin, R (1999) "A.C.E.O. for Children" *The New York Times Magazine* January 3, 1999 p. 23
 144. Invest in Kids (1998) Presentation at *Linking Research to Practice*. October 25. Banff, Alberta
 145. Lapiere, L. (1979) *To Herald a Young Child: The Report of the Commission of Inquiry into the Education of the Young Child* Toronto: Ontario Public School Men Teachers' Federation p. 85
 146. Ontario Ministry of Education (1985) *Report of the Early Primary Education Project* Toronto p. 116
-

-
147. Ontario Ministry of Community & Social Services (1990) *Children First* Toronto: Queen's Printer for Ontario p. 147
 148. Premier's Council on Health, Well-being and Social Justice (1994) *Yours, Mine and Ours: Ontario's Children and Youth Phase One* Toronto: Queen's Printer for Ontario p. 49
 149. Royal Commission on Learning (1994) *For the Love of Learning: Report of the Royal Commission on Learning: A Short Version* Toronto: Queen's Printer for Ontario p. 67
 150. Kent, T. (1999) *Social Policy 2000: An Agenda* Ottawa: Caledon Institute of Social Policy p. 20
 151. Putnam, R. (1993) *Making Democracy Work*. Princeton: Princeton University Press
 152. South East Grey Community Outreach (1998) *Survive and Thrive: A Guidebook for Making Community Development Meet Your Community's Needs* Markdale
 153. Young, M. (1997) Editor. *Early Child Development: Investing in Our Children's Future*. New York: Elsevier p. 330

APPENDIX I

REFERENCE GROUP MEMBERS

Charles Coffey

Mr. Coffey is Executive Vice-president, Business Banking, Royal Bank of Canada, and is chairman of the Canadian Youth Business Foundation.

Janet F. Comis

Ms. Comis is the Executive Director of the Social Planning Council of Kingston and Area where she directs research projects focusing on social service delivery systems, social and health policy, community organization and quality of life.

Julie Mary Desjardins

Ms. Desjardins is a chartered accountant with expertise in maximizing business efficiency and stakeholder value.

Richard David Ferron

Mr. Ferron is a public school principal in North Bay and is a member of the Community Project for Children and the Family First Forum.

Florence Minz Geneen

Florence Minz Geneen chairs the Board of Voices for Children, which raises awareness of how we can ensure healthy development of children. An advocate for children as well as the elderly, she is the immediate past chair of the Board of Directors of Baycrest Centre for Geriatric Care.

Mary Gordon

Ms. Gordon is the administrator of Parenting Programs with the Toronto District School Board. In 1981, she initiated the first Canadian school-based parenting and family literacy programs.

Dr. David (Dan) R. Offord

Dr. Offord is a child psychiatrist with major interests in epidemiology and prevention. He is Professor Psychiatry and Head of the Division of Child Psychiatry at McMaster University and Research Director of the Chedoke Child and Family Centre.

Dr. Terrence Sullivan

Dr. Sullivan is President of the Institute for Work & Health. He acts as senior advisor for the Laidlaw Foundation and is Vice-Chair of the advisory committee for the population health program of the Canadian Institute for Advanced Research.

Clara Will

Ms. Will is the founder and Executive Director of Adventure Place, a child and family early intervention and prevention agency established in 1972 for pre-school children with special needs.

Robin C. Williams, M.D.

Dr. Williams is a Paediatrician, an Associate Clinical Professor, Department of Paediatrics at McMaster University and is the Medical Officer of Health, Regional Niagara Public Health Department.

APPENDIX II CONTRIBUTORS

The work of the Early Years Study was supported by hundreds of individuals and groups within and outside of Ontario. Their generous contributions informed the work of the study.

COMMUNITY VISITS

The Reference Group members visited several community initiatives and met with the following individuals.

North Bay

Rick Ferron - Sunset Park Jr and Sr Public School
Pauline Kenny - Healthy Babies, Healthy Children
Linda McLay - CAPC Project - North Bay CAS
Ron Chase - Victory School, Parry Sound
Crystal Campbell - Sunset Park Public School
Barbara Hennessy - Sunset Park Public School
Nancy Fluery - Sunset Park Public School
Peter Bohm - Child & Family Centre, Parry Sound
Debbie Warring - Sunset Park Public School
Aline Monforton - Sunset Park Public School
Kim Forsyth - Parent, Sunset Park Public School
Ann McCarthy - Nipissing Children's Mental Health
Fran Couchie - Nipissing Children's Aid

London

Graham Clyne - Kids Count
Susan Gorlick - Kids Count
Linda Carmichael - Kids Count
Sue LeMoine - Parent Volunteer, Kids Count
Carmen Dawson - Lord Elgin Public School
Sue Hardy - YWCA
Ailene Wittstein - Merrymount Children's Centre

Chesley

Carol Gott - Kids' N Us
Chuck Beamer - Coordinating Committee on Children & Youth
Janet Glasspool - Bluewater District School Board
Rosalind Brooks - Ministry of Community and Social Services
Mary Jane Murray - YWCA
Brenda Wilton - Bruce County Social Services
Yvonne Waugh - Northport Elementary School, Port Elgin
Mary Ann Alton - Grey County Board of Education
Mary Lanktree - Beaver Valley School

Meredith Nelson - Bruce Grey Social Services
Chris Goodings - Owen Sound Community Living

Windsor

Lois Dobson - Infant & Family Program
Linda Edwards - St. Mary's Family Resource Centre
Laura Tiegs - Infant & Family Program
Kathleen Hoffman - Infant & Family Program
Helen Martin - Infant & Family Program
Sheila Cameron - University of Windsor
Jill Foster - Story Book Nursery School
Christine Lebert - Ready Set Go
Win Harwood - St. Mary's Family Learning Centre
Becky Burrell - St. Mary's Family Learning Centre
Chris Garant - St. Mary's Family Learning Centre
Aggie Sarafianos - St. Mary's Family Learning Centre
Claire McAllister - Sandwich Community Health Centre
Sue Silver - Greater Essex County Board
Heather Boyer - Canadian Auto Workers
Earl Dugal - Canadian Auto Workers

North York

Clara Will – Early Years Action Team
Miriam Bensimon – Early Years Action Team
Art Tabachneck - Early Years Action Team
Pam Musson - Ministry of Community & Social Services
Valerie Sterling - Toronto District School Board
Linda Silver - Better Beginnings, Better Futures
Michael Shultz - Catholic Children's Aid
Brenda Patterson - Toronto Children's Services Division
Ellen Ostofsky - Community Systems Alliance
Susan Makin - Toronto Public Health
Sylvia Geist - Lawrence Heights Community, Mental Health Centre
Ann Fitzpatrick - Metro Toronto Children's Aid Society
Rochelle Fine - Dellcrest Children's Centre
Saleha Bismilla - Toronto Public Health

Halton - Oakville

Pat Dickinson - Halton Our Kids Network
Daria Sharanewch - Oakville Public Library
Sue Quennell - Halton Catholic District School Board
Roy Cooper - Burlington Rotary Club
Linda Love - Sheridan College
Adelina Urbanski - Halton Social and Community Services Department
Bill Kriesal - Ministry of Citizenship, Culture and Recreation
Cathy Kennedy - Ministry of Community and Social Services

Douglas Brown - Children's Assessment and Treatment Centre, Burlington
Mary Beth Jonz - Regional Municipality of Halton
Rosslyn Dowell - Halton Hills Parent-Child Resource Centres
Stacey Green - Halton Hills Recreation and Parks Department

Hamilton

Andrew Debecki - Wrap Around Process
Sam Gardner - Community Social Reporting Project
Debbie Sheehan - Hamilton Wentworth Regional Public Health Department
Ralph Brown - McMaster School of Social Work
Marilyn Oddson - Parent
Margaret Bury - Parent
Katy Wong - Centre for Studies of Children at Risk
Daryl Bainbridge - Centre for Studies of Children at Risk
Vicki Henderson - Philip Services Corp.
Leanne Siracusa - Hamilton-Wentworth Regional Public Health
Jane Underwood - Hamilton-Wentworth Regional Public Health
Joann Heale - Central West Health Planning Information Network
Terrance Henry - Children's Services Tracking Project

Toronto

Allan Kelly - First Nations School - Head Start & Child Care Program
Nigel Dance - First Nations School
Marie Gaudet - First Nations School
Tina Kastris - Parent Council, First Nations School
Kim Kirley - Aboriginal Head Start Program
Eileen Matoush - Parent, First Nations School
Emie Lagapa - Cabbagetown Youth Centre
Mary Gordon - Parkdale Parenting & Family Literacy Centre
Maureen McDonald - Parkdale Parents Primary Prevention
Seija Hyhko - Principal, Parkdale Jr/Sr Public School
Heather McFarlane - Toronto District School Board
Marilyn Doney - Parkdale Jr/Sr Public School
Frances Fagan - Parkdale Jr/Sr Public School
Annie Lee - Parkdale Jr/Sr Public School
Grace Johnson - Parent, Parkdale Jr/Sr Public School
Angela Ferguson - Parent, Parkdale Jr/Sr Public School
Shanthini Karanakarun - Parent, Parkdale Jr/Sr Public School
Sivadevi Jeyakumar - Parent, Parkdale Jr/Sr Public School
Shirley Roberts - St. Joseph's Women's Health Centre
Sudha Coomarasamy - St. Joseph's Women's Health Centre
Monica Gamboa - Parkdale Focus Mom's Support Program
Chris Dean - Parkdale Public Health Department
Maralyn Smith - Creating Together Parent and Child Drop-in

Cornwall

Carol Sauvé - Better Beginnings, Better Futures
Lucie Hart - Better Beginnings, Better Futures
Richard Charlebois - Better Beginnings, Better Futures
Dinah Ener - Better Beginnings, Better Futures
Thérèse André - Better Beginnings, Better Futures
Marc Bisson - Community Health Centre
Monique Boyer - Better Beginnings, Better Futures

Sudbury

Beverly Bourget - Social Planning Council - Council on Children & Family
Annette Reszcynski - Better Beginnings, Better Futures
Carmen Robillard - Brighter Futures, Grandir Ensemble
Sandra Boyce - Sudbury and District Health Unit
Margaret Zubert - Health Canada
Brenda Moxam - Regional Municipality of Sudbury
Leona Theriault - Ministry of Community and Social Services
Yvette Grandbois - Parent, Sudbury East
Marie Watts - Parent, Valley East
Sue Lebrun - Parent Resource Worker
Cherese Scherbak - Parent, Sudbury, Chair
Fleur Hackett - Better Beginnings, Better Futures
Lamine Diallo - Better Beginnings, Better Futures
Eileen Creasy - Better Beginnings, Better Futures
Dario Pandolfo - Better Beginnings, Better Futures
Nancy Malette - Better Beginnings, Better Futures
Ferne Newlove - Better Beginnings, Better Futures

Kingston

Wendy Christopher - Better Beginnings, Better Future
Charlotte Rosenbaum - North Kingston Community Health Centre
Janet Comis - Kingston Social Planning Council
Sharon Burke - Queen's University
Pam Carr - Kingston, Frontenac, Lennox and Addington Health Unit
Nadia Zurba - North Kingston Community Health Centre
Wendy Kelen - North Kingston Community Health Centre
Sara Craig - North Kingston Community Health Centre
Linda Sibeko - North Kingston Community Health Centre
Jennifer Jackson - North Kingston Community Health Centre
Verity Hill - North Kingston Community Health Centre
Leann Cunningham - Better Beginnings for Kingston Children
Karen Laidlaw - Better Beginnings for Kingston Children
Anna Gooderham - Better Beginnings for Kingston Children
Janice Webb - Better Beginnings for Kingston Children
Wendy Flecker - Better Beginnings for Kingston Children
Cheryl Pichie - Better Beginnings for Kingston Children

Michelle Miller - Better Beginnings for Kingston Children
Kim Jones - Better Beginnings for Kingston Children
Trish Noble - Better Beginnings for Kingston Children
Susan Perault - Better Beginnings for Kingston Children
Sherry Smith - Better Beginnings for Kingston Children
Sue McCoubrey - Better Beginnings for Kingston Children
Michelle Hickey - Better Beginnings for Kingston Children
Tanis Fairley - Rideau Heights Public School
Carolyn Tribe - Better Beginnings for Kingston Children
Louise Alexandre - Better Beginnings for Kingston Children
Gena Bronson-Boot - Circle of Friends Day Care
Lynn Shipman - Better Beginnings for Kingston Children
Helen Mabblerly - Better Beginnings for Kingston Children
Elaine Radway - North Kingston Community Health Centre
Diane Carter-Robb - Better Beginnings for Kingston Children
Brenda Piasetzki - Better Beginnings for Kingston Children
Kim Foshay - Better Beginnings for Kingston Children
Donna West - Better Beginnings for Kingston Children
Cindy Alvarez - Better Beginnings for Kingston Children
Yvonne McKenna - Better Beginnings for Kingston Children
Pauline Gooding - Better Beginnings for Kingston Children
Kris Millan - Kingston, Frontenac and Addington Health Unit

Thunder Bay

Karen Fogolin - Communities Together for Children
Jane Ramsey - Our Kids Count - CAPC
Bernice Dubec - Aboriginal Head Start Nursery School
Sal Nebenionquit - Aboriginal Head Start Nursery School
Gilda Dokuchie - Aboriginal Head Start Nursery School
Nicole Favot - Aboriginal Head Start Nursery School
Tammy Bobyk - Aboriginal Head Start Nursery School
Jackie Gagnon - Aboriginal Head Start Nursery School
John Cosgrove - Catholic Family Development Centre
Gladys Berringer - Our Kids Count
Madeleine Traer - Our Kids Count
Tammy Andrusyk - Our Kids Count
Lynne Julius - Thunder Bay Regional Hospital
Diane Hannon - Our Kids Count
Mary Lucas - Ontario Works
David Williams - Thunder Bay District Health Unit
Suzan Labine - Lakehead Public School Board
Fiona Karlstedt - Thunder Bay Children's Aid
Debbie Bennett - Lakehead Regional Family Centre
Barbara Elliott - Communities Together for Children
Alan Young - Psychologist
Janette Bax - Communities Together for Children

Ottawa

Barbara Stollery - Jr. Kindergarten project

Judith Hoy - Jr. Kindergarten project

Toronto Parent Focus Group (Cabbagetown Youth Centre)

Liz Mustacho

Shahreh Mahdavi

Bevenech Ali

Asmita Gillani

Margarida Avila

Remedios Castulo

Wendy Dalby

Kayfa Roesslein

Leonara Taculad

Annette Perry

Jose Tovera

Donna Chudnow

Urbano Quelnat

Katherine Mills

Fely Barzo

Susan Litchen

Lourdes Lagapa

Eleanor Heinz

Erla Juravsky

Thompson Egbo-Egbo

Emil Felipe

Phoebe Guan

Esther Huynh

Miranda Hawkins

Julio Rocci

Janice Carment

Naty Palla

Pirabaaliny Velauthan

Mehrad Daroei

Vanessa Young

Vic Campos

Irene Ip

Christina Neilson

Rose Malcampo

INDIVIDUAL AND GROUPS

The following individuals and groups were interviewed for the Early Years Study or met with the co-chairs and members of the Reference Group.

Carol Acker - Ontario Association of Community Health Centres
Dennise Albrecht - Ontario Association of Community Health Centres
David Aylsworth - Ontario Teachers Federation
Craig Barton - Brookhaven Public School
Amina Bhallo - Centres for Early Learning
Mary Ann Bedard - Fern Child Care Centre
Robert Beamer - Ontario Provincial Police
Joe Beitchman - Hospital for Sick Children
Mike Benson - Ontario Principals' Council
Nancy Birnbaum - Invest in Kids
Lynn Blake - Ontario Elementary Catholic Teachers Association
Scott Bleecker - Ontario Provincial Police
Denyse Brisson - CODELF
Carol Brown - Organization for Parent Participation in Childcare and Education, Ontario
Barbara Buffet- Ontario Coalition for Better Child Care
Gerry Caplan - Royal Commission on Learning
Madeleine Champagne - CODELF
Karen Chan - Municipality of Halton
Elsie Chan - Home Child Care Association of Ontario
Diane Chenier - Association des enseignantes franco-Ontariens (AEFO)
Ester Cole - Counselling Foundation
Marg Cox - Ontario Association of Family Resource Programmes
Sue Cunningham - Ontario Family Studies Coordinators' Council
Annie Dell - Association des conseillères des écoles publiques de l'Ontario (ACEPO)
Candice Dolny - Toronto Catholic District School Board
Lee Dunster - Ontario Network of Home Child Care Provider Groups
Barb Dysuk - K-W Counselling Services Inc.
Jasmine Earl - Ontario Association of Family Resource Programmes
Diane Ellis - FAPFO
Bruce Ferguson - Hospital for Sick Children
Wanda Fletcher - Grenoble Public School
Joan Francolini - Lawson Foundation
Robyn Gallimore - Association of Early Childhood Educators, Ontario
Lorraine Gandolfo - AFOCSC
Tina Ginglo - Firgrove Public School
Susan Goddard - Shoreham Public School
Alan Goldbloom - Academic & Clinical Development, Hospital for Sick Children
Charlene Gorbet - Health Canada
Carol Gott - Kids 'n Us
Moirra Graham - Park Public School
Ron Harris - Ontario Secondary School Teachers Federation
Cheryl Hassen - CBC
Sue Hathway - Firgrove Public School

Brian Hayday - Ontario Prevention Clearinghouse
Jonathon Hellmann - Hospital for Sick Children
Clive Hodder - Provincial Schools, Ministry of Education and Training
Sheryl Hoshizaki - Ontario Principals' Council
Shirley Hoy - Community Services, Toronto
David Hughes - Municipality of Grey Bruce
Seija Hyhko - Principal, Parkdale School
Danielle Ingster - Broadlands Public School
Donna Lacaver - Ontario Elementary Catholic Teachers Association
Anne Lacy - Lord Dufferin Public School
Sarah Landy - Growing Together
Peter Lang - Action for Children Group, Kitchener
Barb Lillico - Ontario Association of Family Resource Programmes
Freda Martin - The Hincks-Dellcrest Institute
Debbie Massey - Toronto Police
Guy Matte - AEFO
Vivian McAffrey - Elementary Teachers Federation of Ontario
Jane MacDonald - Ontario Association of Community Health Centres
Kim McIntyre - Park Public School
Kerry McQuaig - Ontario Coalition for Better Child Care
Louise Moody - Ontario Association of Family Resource Centres
Daniel Morin - Association des conseilleres des écoles publiques de l'Ontario (ACEPO)
Sandy Moshenko - Ontario Association of Children's Aid Societies
Margaret Motz - Waterloo Region
Linda Nagle - Municipality of Windsor
Elle Orav - Denlow Public School
Charles Pascal - Atkinson Foundation
Ann Peel - Voices for Children
Rheal Perron - Association franco-ontarienne des conseils scolaires catholiques (AFOCSC)
Brenda Pickup - Babies Best Start
Leslie Pierson - Wilfrid Laurier University
Louise Pinet - Association des conseilleres des écoles publiques de l'Ontario (ACEPO)
Gail Preston - Municipality of Ottawa-Carleton
Isaac Prilleltensky - Wilfrid Laurier University
Harry Quan - Jesse Ketchum Public School
David Rainham - Family Physician
Nancy Ring - Park Public School
Bruce Rivers - Toronto Children's Aid Society
Wendy Roberts - Hospital for Sick Children
Peter Rosenbaum - Bloorview Medical Centre
Laurel Rothman - Campaign 2000
Elizabeth Ridgely - George Hull Centre
Adair Roberts - Hospital for Sick Children
Carol Crill Russell - Invest in Kids
Christiana Sadeler - Community Safety and Crime Prevention Council of Waterloo Region
Ron Sax - Waterloo Region
Diane Schenier - AFO
Theresa Schumilas - Family and Community Resources, Waterloo Region
Nancy Shosenberg - Canadian Institute of Child Health

Jane Soldera - Municipality of Hamilton-Wentworth
Brian Shaw - Hospital for Sick Children
Paul Steinhauer - Hospital for Sick Children
Valerie Stirling, Toronto District School Board
Mary Taylor - Former teacher, London
Rosanna Thoms - Association of Community Information Centres
Laura Tryssenaar - Avon-Maitland District School Board
Sister Valerie Van Cauwenberghe - Former teacher, London
Petr Varmuza - Municipality of Toronto
Jeremy Vincent - Lord Dufferin Public School
Ruth Walker - R.J. Lang E/MS
Nancy Wannamaker - Elementary Teachers Federation Ontario
Sheila Weinstock - Ontario Association of Children's Mental Health Centres
Jill Wilkinshaw - Dundas Public School
Carol Yaworski - Learning Disabilities Association of Ontario
Georgie Yerxa - Midland Collegiate Institute

PRESENTERS/REVIEWERS/RESEARCHERS

The co-chairs and reference group had generous assistance from the following individuals who presented information, reviewed material and analyzed related data.

Peter Barnes
Robbie Case
Gordon Cleveland
Max Cynader
Gillian Doherty
Martha Friendly
Elhanan Helpman
Clyde Hertzman
Dan Keating
Donna Lero
Lew Lipsitt
Julie Mathien
Harriet MacMillan
Craig Riddell
Nancy Ross
Carol Crill Russell
Steve Suomi
Harry Swain
Helmat Tilak
Karen Watson
Doug Willms
Michael Wolfson
Allen Zeesman

STAFF - Children's Secretariat

Pamela Bryant
Heather Martin
Adele Scott-Anthony
Mark Trumpour
Mark Woollard

ADM Early Years Action Team

Colin Andersen
Pamela Bryant
Trinela Cane
Kevin Costante
Steve Dorey
Jessica Hill
Lynn MacDonald
Anne Martin
Ann Masson
Jane Marlatt
Leah Myers
Saäd Rafi
Lucille Roch
Peter Rzadki
Michael Scott
Barb Saunders
Ron Saunders
Benita Swarbrick
Linda Sutton
Peter Wallace
Peggy Mooney
Barry Whalen
Judith Wright
Lynne Livingstone

Consultants

Jane Beach
Michael Cushing
Arthur Donner
Kathleen Guy
Cheryl Hamilton
Fred Lazar
Dawna Wintermeyer

Communications

Sally Barnes

Barbara McConnell

Cover Design and Figures

Michael McKinnon
Eberhard Zeidler
Environics Communications

Founders' Network Staff

Dorothy McKinnon
Cheryl Mooney

Graphic Design and Layout

Caterpillar Graphics
Tina Snelgrove

French Translation

Nomis Translation Services
Lexi-Tech International
Troxler Translation Services
Emmanuelle Demange
Christa Japel
Katia Maliantovitch

APPENDIX III

TERMS OF REFERENCE

Purpose

The study will provide options and recommendations to the government with respect to the best ways of preparing all of Ontario's young children -- including those at risk or with special needs -- for scholastic, career and social success. The development of the whole child, giving consideration to a comprehensive model of seamless supports and early interventions, is of paramount importance.

Further, the study will clarify roles and responsibilities and recommend options for collaborative service models for early learning for children including local and provincial level initiatives based on best practices. Leadership will be provided by Dr. Fraser Mustard, and the Honourable Margaret McCain, acting as co-chairs of the study.

The co-chairs will report to the Minister Responsible for Children.

The Minister Responsible for Children will consult with the Ministers of Education and Training; Community and Social Services; Health; Citizenship, Culture and Recreation; and the Solicitor General throughout the study.

Resources

The Children's Secretariat assisted by the Office of Integrated Services for Children, the Ministries of Education and Training; Community and Social Services; Health; Citizenship, Culture and Recreation; and the Solicitor General and Correctional Services, will provide leadership and staff support to the early learning study.

Timing

This work will take place from May 1998 to December 1998. An interim report will be provided not later than October 15, 1998 and a final report will be completed by December 21, 1998.

The interim report will allow the government to consider recommendations from the study with a view to establishing new early learning directions for implementation in the 1999/2000 school year.

Scope:

The study will:

1. Identify the nature, extent and effectiveness of existing programs, including Junior Kindergarten;
2. Determine the current roles and relationships of government ministries in the provision of these supports;
3. Identify related legislation, regulations, policy and plans that may impact on early learning;

-
4. Summarize leading research findings with respect to early learning;
 5. Inventory current models of early learning practiced in other jurisdictions;
 6. Identify main stakeholders and define their roles in early learning as related to the mandates of the Ministries of Education and Training; Health; Community and Social Services; Solicitor General and Correctional Services; Citizenship, Culture and Recreation; and
 7. Gather and analyze other information.

Ongoing initiatives of the various Ontario ministries involved in early learning will be identified. For example, the study will take into account the strategic directions of the Office of Integrated Services for Children as well as the line ministries.

Lines of Enquiry

Appropriate processes should be in place to support early learning in Ontario which are consistent with best practices as well as criteria of high-quality service, cost-effectiveness and accountability.

Service models in Ontario, in other jurisdictions, and as presented in current authoritative research should be investigated with a view to identifying best practices suitable for replication/implementation in Ontario. In a holistic context, the relevance of individual programs should be evaluated. Opportunities to improve existing programs should be identified as well as key strengths of existing processes that can provide a continuing foundation for new directions.

Processes for strategic, operational and financial planning, monitoring and evaluation of early learning programs should be examined with a view to identifying opportunities to develop and improve collaboration, enhance overall effectiveness and achieve efficiencies.

Collaborative and partnership models are to be considered which would actively engage the federal, provincial and municipal governments, school boards, communities, and the private sector.

Obstacles or barriers to collaborative planning, service delivery, monitoring, evaluation or the pursuit of best practices should be identified with a view to proposing remedial actions.

Context

Current and emerging research consistently shows that early learning is beneficial to the social development and future educational success of children. Further, a strong foundation in early learning will result in a reduced need for later remedial school programs as well as other costly interventions.

As knowledge has improved about brain development in early life, so has understanding of the relationship of early childhood experience to learning in school and in adult life. As with health outcomes, cognition and behavioural characteristics are also influenced by events during childhood. Brain development is much more extensive and rapid before age one than was previously thought, and is vulnerable to environmental influences that are long-lasting in their impact. Brain development is fostered by nutrition and stimulation, and by the time a child has reached age five, most of the brain's wiring is complete; reversing poor development is difficult after this age. The child's readiness to learn and health at this stage will set the pattern for later life.

This study builds on the government's Healthy Babies, Healthy Children program and its Education reform agenda. The Ontario government recognizes that children benefit from an early start to learning prior to compulsory schooling. Recent grade three test results show that there is room for improvement for our young children.

On March 25, 1998, the government announced a new student-focused funding model. Starting in the 1998-99 school year, the province will guarantee funding for early learning programs, including Junior Kindergarten (JK), to make sure all young children are given a successful start in school. All school boards currently providing Junior Kindergarten will receive funding to continue this program. Boards that currently do not offer Junior Kindergarten will receive funding if they choose to start a JK program. The government will also be providing a new Kindergarten program for Junior Kindergarten and Senior Kindergarten.

School boards will have the option of offering alternative early learning programs. If a board chooses not to offer Junior Kindergarten, it will receive an equivalent amount of funding through the Early Learning Grant to provide alternative or enriched programs for young children up to grade three. Board discretion and innovation are encouraged. The study will consider community partnerships with school boards and others to determine the best school readiness options and practices. As well, grants are now in place to address the needs of children at risk, and children with special needs through the Learning Opportunities Grant and the Special Education Grant, respectively.
