



2010

# Community Mapping Study of Moose Jaw – South Central Saskatchewan



*Prepared by Nazeem Muhajarine, Kathryn Green, Fleur Macqueen Smith, Chassidy Puchala, and Paula Ghiglione,  
Healthy Children research team, Saskatchewan Population Health and Evaluation Research Unit,  
University of Saskatchewan, and Melody Mitchell, Community Coordinator, Moose Jaw – South Central Saskatchewan  
Understanding the Early Years*

[www.ourchildrenourpromise.ca](http://www.ourchildrenourpromise.ca)

This project is funded by the Government of  
Canada's Understanding the Early Years Initiative.



The opinions and interpretations in this publication are those of the authors and do not necessarily reflect those of the Government of Canada.

Photographs in this report are of children and families in the Moose Jaw – South Central Saskatchewan Understanding the Early Years region. All photographs are used with permission.

This report and other information related to this project can be found on the project's website at: [www.ourchildrenourpromise.ca](http://www.ourchildrenourpromise.ca) and on the website of the Saskatchewan Knowledge to Action Network for early childhood development, kidSKAN, at [www.kidskan.ca](http://www.kidskan.ca).

# Table of Contents

<b>A MESSAGE FROM MELODY MITCHELL, THE STUDY'S COMMUNITY COORDINATOR</b>	<b>4</b>	<b>3 Findings</b>	<b>28</b>
<b>EXECUTIVE SUMMARY</b>	<b>5</b>	3.1 <i>Number of children</i>	28
<b>1 Introduction</b>	<b>9</b>	3.2 <i>School readiness</i>	28
1.1 <i>The understanding the early years project in Canada and in Moose Jaw - South Central</i>	10	3.2.1 <i>Physical health and wellbeing</i>	30
1.1.1 <i>Who is involved?</i>	10	3.2.2 <i>Social competence</i>	32
1.1.2 <i>What are the study objectives?</i>	11	3.2.3 <i>Emotional maturity</i>	36
1.1.3 <i>What does the Understanding the Early Years initiative measure?</i>	11	3.2.4 <i>Language and cognitive development</i>	39
<b>2 How the study was conducted</b>	<b>14</b>	3.2.5 <i>Communications skills and general knowledge</i>	42
2.1 <i>The Moose Jaw - South Central Region</i>	14	3.3 <i>Children vulnerable in one or more domain</i>	42
2.2 <i>Study areas</i>	15	3.4 <i>Parent Interviews and Direct Assessment of Children</i>	47
2.3 <i>Variables used in the study</i>	17	3.4.1 <i>Characteristics of the families participating in PIDACS</i>	47
2.3.1 <i>Readiness to learn</i>	18	3.4.2 <i>Direct assessment of cognitive development</i>	48
2.3.2 <i>Social Risk Index</i>	18	3.4.3 <i>Behavioural outcomes</i>	48
2.3.3 <i>Resource Access and Availability</i>	19	3.4.4 <i>Children's health</i>	49
2.4 <i>Combining school readiness, social risk, and resource scores in maps</i>	21	3.4.5 <i>Family functioning and maternal depression</i>	50
2.5 <i>Parent Interviews and Direct Assessments of Children Survey</i>	22	3.4.6 <i>Parenting</i>	50
2.5.1 <i>Direct assessment of cognitive development</i>	23	3.4.7 <i>Community activities and resources</i>	51
2.5.2 <i>Parent interview</i>	23	3.4.8 <i>Child care</i>	53
<i>Behavioural outcomes</i>	23	3.4.9 <i>Neighbourhood characteristics and social support</i>	55
<i>Children's health outcomes</i>	24	3.5 <i>Pre-School Education and School Readiness</i>	56
<i>Family functioning and maternal depression</i>	24	3.6 <i>At-Risk Births</i>	56
<i>Parenting</i>	25	<b>4 Conclusions and Topics for Community Discussion</b>	<b>59</b>
<i>Community activities and resources</i>	25	4.1 <i>Key findings</i>	59
<i>Child care</i>	26	4.2 <i>Using this information to improve children's wellbeing</i>	61
<i>Neighbourhood characteristics</i>	26	<b>REFERENCES</b>	<b>64</b>
2.6 <i>At-Risk Births</i>	27	<b>APPENDICES</b>	
		Appendix A: <i>Social Risk Index components for Moose Jaw-South Central study areas</i>	65

Appendix B: Detailed description of challenge cut-offs for EDI sub-domains	66	Figure 2.3 Categories of readiness to learn	21
<b>LIST OF MAPS</b>		Figure 3.1 Percentages of children in Moose Jaw-South Central who are Ready, At Risk, or Vulnerable by each domain	28
Map 2.1- Map of the Moose Jaw-South Central region and its location in Saskatchewan	16	Figure 3.2 Percentage (number) of children considered challenged in terms of physical readiness for school	30
Map 3.1 Total Number of Children, with Social Risk Index Score	29	Figure 3.3 Percentage (number) of children considered challenged in terms of physical independence	31
Map 3.2 Total Number of Children, with Resource Access and Availability Score	29	Figure 3.4 Percentage (number) of children considered challenged in terms of gross and fine motor skills	31
Map 3.3 Physical Health and Wellbeing, with Social Risk Index Score	31	Figure 3.5 Percentage (number) of children considered challenged in terms of overall social competence	33
Map 3.4 Physical Health and Wellbeing, with Resource Access and Availability Score	32	Figure 3.6 Percentage (number) of children considered challenged in terms of responsibility and respect	34
Map 3.5 Social Competence, with Social Risk Index Score	35	Figure 3.7 Percentage (number) of children considered challenged in terms of approaches to learning	34
Map 3.6 Social Competence, with Resource Access and Availability Score	35	Figure 3.8 Percentage (number) of children considered challenged in terms of readiness to explore new things	34
Map 3.7 Emotional Maturity, with Social Risk Index Score	38	Figure 3.9 Percentage (number) of children considered challenged in terms of prosocial and helping behaviour	37
Map 3.8 Emotional Maturity, with Resource Access and Availability Score	38	Figure 3.10 Percentage (number) of children considered challenged in terms of anxious and fearful behaviour	37
Map 3.9 Language & Cognitive Development, with Social Risk Index Score	41	Figure 3.11 Percentage (number) of children considered challenged in terms of aggressive behaviour	37
Map 3.10 Language & Cognitive Development, with Resource Access and Availability Score	41	Figure 3.12 Percentage (number) of children considered challenged in terms of hyperactivity and inattention	37
Map 3.11 Communications Skills & General Knowledge, with Social Risk Index Score	43	Figure 3.13 Percentage (number) of children considered challenged in terms of basic literacy	40
Map 3.12 Communications Skills & General Knowledge, with Resource Access and Availability Score	43	Figure 3.14 Percentage (number) of children considered challenged in terms of interest in literacy/numeracy	40
Map 3.13 Percentage of Children Vulnerable in One or More Domain, with Social Risk Index Score	45	Figure 3.15 Percentage (number) of children considered challenged in terms of advanced literacy	40
Map 3.14 Percentage of Children Vulnerable in One or More Domain, with Resource Access and Availability Score	45	Figure 3.16 Percentage (number) of children considered challenged in terms of basic numeracy	40
Map 3.15 Percentage of Children Vulnerable in Two or More Domains, with Social Risk Index Score	46		
Map 3.16 Percentage of Children Vulnerable in Two or More Domains, with Resource Access and Availability Score	46		
<b>LIST OF FIGURES</b>			
Figure 2.1 Social Risk Index by study area	19		
Figure 2.2 Resource Access and Availability score by study area	20		

Figure 3.17 Percentage (number) of children with low scores on early literacy skills, number knowledge, and receptive language	48
Figure 3.18 Percentage (number) of children with behavioural problems	49
Figure 3.19 Percentage (number) of children with physical health problems	49
Figure 3.20 Percentage (number) of children with mental health problems	49
Figure 3.21 Percentage (number) of families with poor functioning and maternal depression	50
Figure 3.22 Average scores for parenting practices	50
Figure 3.23 Percentages (number) of parents practicing each type of parenting style	51
Figure 3.24 Frequency of children's participation in extracurricular activities	51
Figure 3.25 Frequency of children's engagement in literacy activities	52
Figure 3.26 Frequency of children's use of recreational resources	52
Figure 3.27 Frequency of children's use of entertainment and cultural resources	53
Figure 3.28 Frequency of children's use of educational resources	53
Figure 3.29 Use of child care arrangements and average total hours of child care per week	54
Figure 3.30 Number of types of child care arrangements used	54
Figure 3.31 Types of child care arrangements used	54
Figure 3.32 Percentage (number) reporting high levels of neighbourhood quality, safety, cohesion and social support	55
Figure 3.33 Percentage (number) of children scoring low on one or more EDI domains, comparing those who attended pre-K or pre-school to those who did not	56
Figure 3.34 Percentage (number) of births considered at-risk, for all years and by year, 2002-2009	56
Figure 3.35 Percentage (number) of births considered at-risk by mother's age category, for all years and by year, 2002-2009	57
Figure 3.36 Percentage (number) of births considered at-risk by study area, 2002 to 2009	58
Figure 3.37 Percentage (number) of births considered at-risk by mother's age and study area, 2002 to 2009	58

## LIST OF TABLES

Table 2.1 Population of study areas	17
Table 2.2 Characteristics of Children 'Ready to Learn' in EDI Domains and Sub-Domains	17
Table 2.3 Four types of parenting styles: Authoritative, Authoritarian, Permissive, and Neglectful	25
Table 3.1 Percentage (number) of children considered vulnerable in physical health and wellbeing domain and challenged in sub-domains	30
Table 3.2 Percentage (number) of children considered vulnerable in social competence domain and challenged in sub-domains	33
Table 3.3 Percentage (number) of children considered vulnerable in emotional maturity domain and challenged in sub-domains	36
Table 3.4 Percentage (number) of children considered vulnerable in language and cognitive development domain and challenged in sub-domains	39
Table 3.5 Percentage (number) of children considered vulnerable in communication skills and general knowledge domain	42
Table 3.6 Percentage (number) of children considered vulnerable in more than one and more than two domains	44
Table 3.7 Characteristics of families participating in PIDACS	47



# A message from Melody Mitchell, the study's Community Coordinator

Gratitude is expressed to Dr. Nazeem Muhajarine, Kathryn Green, Fleur Macqueen Smith, Brandy Winquist, Chassidy Puchala, Paula Ghiglione, and Bonnie Zink of the Saskatchewan Population Health and Evaluation Research Unit (SPHERU), University of Saskatchewan. The team generously shared their knowledge, skills and experience to guide Moose Jaw-South Central Understanding the Early Years over the past three years, during the process of collecting and analyzing the data used to create our Mapping Reports. This report would not be possible without their guidance and expertise. Thanks also to Lori Verishagen, graphic designer with Printing Services Document Solutions & Distribution at the University of Saskatchewan, for making this report so attractive to look at and easy to read.

Recognition is also given to the project sponsor, Prairie South School Division, and Lori Meyer, Superintendent of Student Support Services who served as Managing Director of this project. Their support and contributions given throughout all stages of this project have been invaluable. In addition, many individuals have contributed their time and efforts to the success of this initiative. In particular, Christine Boyczuk, Regional Intersectoral Committee Coordinator, and the Regional Intersectoral Committee, along with Joan McMaster, Early Childhood Coalition Chair, and the Early Childhood Coalition members, have so diligently worked on the UEY project. Their dedication, hard work and commitment to Early Years Development have brought about many initiatives that benefit children in our community.

The Early Childhood Coalition includes representatives of:

- The Prairie South School Division and the Holy Trinity Catholic School Division
- Five Hills Health Region: Metal Health and Addictions Services and Public Health Services
- Moose Jaw-South Central Regional Intersectoral Committee
- Ministry of Social Services
- *KidsFirst* Moose Jaw and Regional *KidsFirst* Community Developers
- Parent Mentoring Program
- Moose Jaw YMCA
- Transition House
- Early Learning and Child Care, Ministry of Education
- South Central Early Childhood Intervention Program
- Moose Jaw Literacy Network
- Military Family Resource Centre

Thanks also to all those involved in providing community programs and services, for all their work, and to the many families who participated in this research project. Thank you for sharing with us photographs of children for use in our publications, including this one; all photographs have been used with permission.

Appreciation is also extended to the Government of Canada's Understanding the Early Years initiative for funding this community research project.



# Executive Summary

The early years of life are a fundamentally important time, with impacts that last far beyond childhood. Research has found that many of the health and social challenges adults face are influenced by early childhood experiences.

Children's development during these critical years is shaped by the environments within which they live, independent of and in combination with their biological characteristics. Access to services, programs and amenities, such as libraries, health care facilities, and child care has an impact on children's development and parents' ability to provide adequate care and stimulating learning. Thus, efforts to improve early childhood development should not focus solely on parents, but also consider the environments in which families live.

The Understanding the Early Years (UEY) study described in this report is about children and their early environments—specifically, children during their kindergarten year and their communities. It is part of a national research and community development project, funded and managed by the Government of Canada's Understanding the Early Years initiative, that is designed to enable community members to work together to address the needs of young children. The project focuses on raising community awareness of factors that can influence young children's development, and strengthening communities' capacity to use local data to inform decisions so as to enhance children's lives.

## **HOW THE STUDY WAS CONDUCTED**

The project described here was carried out in the city of Moose Jaw and the surrounding South Central region of Saskatchewan. For the purpose of this study, the region was divided into ten study areas.

The main outcome studied is "readiness to learn." Every kindergarten student in the region was assessed by his or her kindergarten teacher using the Early Development Instrument (EDI) in five developmental domains: physical health and wellbeing; social competence; emotional maturity; language and cognitive development; and communication skills and general knowledge. The report focuses on the percentage of children considered vulnerable in each domain, compared to the Canadian norm. Four of the domains are divided into sub-domains; for these, we present the percentage of children considered challenged in each sub-domain, meaning that they have poor or no skills. In addition, a trained assessor evaluated the cognitive development of a subgroup of the children, and the parents of some of these children were interviewed about the child's behaviour and mental and physical health. Because this subgroup was smaller, the study areas were grouped into two sub-regions, urban and rural.

To understand the environment in which children and their families live, two contextual measures were created for each study area. The Social Risk Index rates study areas based on whether they exceed the provincial average on six indicators (single parent families,

low education, transience, home rentals, receipt of government transfers, and low income). The Resource Availability score describes the extent of programs and services available to children and families in each study area. Additional environmental factors were assessed through the parent interview mentioned above, through questions on family functioning, use of community resources, and neighbourhood characteristics.

In addition to the EDI and PIDACS data, the report presents information collected on at-risk births through the In-Hospital Birth Questionnaire from 2002 to 2009.

#### **FINDINGS OF THE STUDY**

- On the positive side, as assessed by their teachers using the EDI, kindergarten students in the Moose Jaw-South Central region overall are doing well in all areas of school readiness in comparison to the Canadian norm, particularly in the domains of social competence and communication skills and general knowledge; they are also much less likely to be vulnerable in one or more domains.
  - However, one in five children in the region (109 in total) enters the school system vulnerable, meaning they are behind in at least one area of development.
  - Moreover, there is considerable disparity within the region; in each domain, study areas varied considerably in terms of the proportion of children considered vulnerable, with percentages ranging from 0% to almost 19%.
- The 2006 Canadian Census data indicates that the average family income of the community was about \$64,000, which was considerably below the Canadian average of \$82,000. Similarly, the median income was substantially below the national median. Nearly one in five families had incomes below \$30,000 per year. However, the unemployment rate was below the Canadian average and there was a low level of transience.
  - The William Grayson area performed well in more domains than any other study area, having less than half as many children considered vulnerable as the norm in four domains; the Rural Southwest, Palliser Heights, and South Hill East each had low percentages in three domains (but Palliser Heights also had a higher than normal percentage in one domain, as did South Hill East in two domains).
  - East End, on the other hand, had more vulnerable children than the norm in three domains, and one third of its children are vulnerable in one or more domains; yet, in the social competence domain, this study area too had less than half as many considered vulnerable as the norm.
  - Breaking down the domains into sub-domains reveals even greater variation, with many study areas having higher than normal percentages of children challenged in some sub-domains, even though the percent vulnerable on the domain as a whole was around or even below the norm.
  - Overall, study areas with higher social risk did not have more children considered vulnerable, nor was greater access to and availability of resources associated with lower levels of vulnerability.

- When evaluated by a trained assessor, more children of the region received low scores on a test of early literacy skills than the Canadian norm, but they did much better than the national average on number knowledge, and about the same or slightly better in terms of receptive language.
- The prevalence of children with behavioural problems according to parent interviews was similar to or lower than the Canadian norm, with the exception of prosocial behaviour, which was more likely to be lacking among children in this region, especially those in the rural sub-region.
- About one in ten children in the region has a functional health problem that limits his or her activities. The frequency of depressive symptoms and anxiety was similar to the Canadian norm and slightly more common in Moose Jaw than in the rural areas.
- Families in the region were comparable to the Canadian average in terms of the likelihood of poor family functioning, and less likely to have experienced maternal depression in the preceding week. On both these indicators, the rural sub-region fared slightly better.
- Families in both rural and urban sub-regions were substantially less likely than the Canadian average to use an authoritative parenting style, which has been associated with better developmental outcomes. Parents in the rural

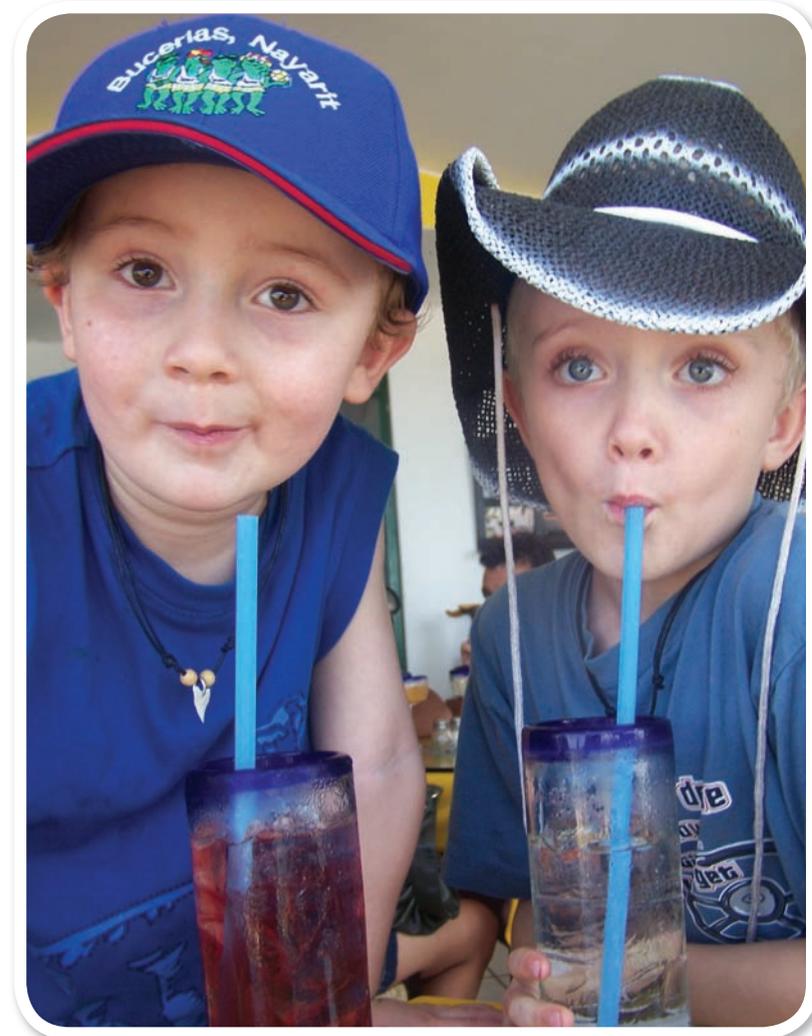


sub-region were more likely to use authoritarian (28.6% versus 25.6% among the Canadian normative sample) or permissive styles (12.7% versus 10.5%), and those in Moose Jaw were more likely to use a neglectful parenting style (16.2% versus 11.4%).

- Almost three quarters of parents (73%) use some type of child care, with the most common type being care in someone else's home by a non-relative (55%).
- Children in the MJ-SC region watched television or videos on average about 1.8 hours per day, which is above the Canadian average of 1.6 hours per day. Children in single parent and low-income families spent more time watching television and playing videos. Also, the average screen-time for girls was slightly higher than that of boys.
- Children were actively engaged in unorganized sports 4.4 times per week, which is higher than the Canadian average of 3.8 times per week. These kinds of play-based activities are particularly important for young children to develop healthy bodies and minds.
- Close to three quarters of those living in Moose Jaw consider their neighbourhood to be of high quality, compared to less than half of those in the rural sub-region. On the other hand, almost everyone living in the rural area rated their neighbourhood high

on safety and cohesion; the rates for Moose Jaw were lower, but not far from the Canadian average. Similarly, rural residents were more likely than those living in Moose Jaw and the average Canadian to consider that they have high levels of social support.

- Children who attended some kind of pre-school or pre-kindergarten education were less likely to be vulnerable in one or more domains than those who had not attended these kinds of programs. However, attending pre-school or pre-kindergarten was not associated with better performance on any of the five EDI domains in kindergarten.
- From 2002 to 2009, an average of 17% of births in the region were considered at-risk, based on the In-Hospital Birth Questionnaire, with younger women and Aboriginal women most likely to have at-risk births.
- The proportion of at-risk births varied substantially among study areas, with three—East End, South Hill East, and the William Grayson area—experiencing one in five or more at-risk births. These areas are among those with the highest social risk scores.



# 1 | Introduction

The early years of life are a fundamentally important time, with impacts that last far beyond childhood. Research has found that many of the health and social challenges adults face—including mental health problems, obesity, heart disease, criminality, and difficulties with literacy and numeracy—are influenced by early childhood experiences.

Children's development during these critical years is shaped by the environments within which they live, independent of and in combination with their biological characteristics. Their relationships with parents and other caregivers are considered the 'building blocks' of healthy development (Shonkoff & Phillips, 2000), and, as the creators of children's first environments, caregivers play a primary role in early childhood; but their capacity to foster children's development is in turn influenced by the social systems that they are part of, such as neighbourhoods and communities (Shonkoff & Phillips, 2000; Willms, 2002). Access to services, programs and amenities, such as libraries, health care facilities, and child care has an impact on children's development and parents' ability to provide adequate care and stimulating learning environments (Shonkoff & Phillips, 2000) and so efforts to improve early childhood development cannot focus solely on parents, but must consider the environments in which families live. The study described in this report is about children and their early environments—specifically, children during their kindergarten year and their communities.

The report provides insights into children's development from birth to age six in the Moose Jaw-South Central Understanding the Early Years (UEY) Region. It provides a visual representation of the cognitive, social, emotional, and physical development of kindergarten students in this region, set against the socio-demographic milieu of their communities. The report is organized into four sections:

1. *Introduction* briefly describes the Understanding the Early Years project, the organizations involved, and its goals and objectives;
2. *How the Study was Conducted* describes how the region was divided into study areas and explains how the main concepts in the study were measured;
3. *Findings* uses maps, tables, and graphs to present the proportion of children considered not on track in various developmental domains, in relation to the risks and resources within each study area;
4. *Conclusions and Topics for Community Discussion* summarizes and discusses the key findings, and suggests some possible next steps to consider.

This is the second of two community mapping reports for the Moose Jaw-South Central UEY project. The first report, produced in March 2008, includes a detailed description of community programs and social risk variables. This report builds on the first by presenting findings on school readiness in relation to community resources and risks.

## **1.1 THE UNDERSTANDING THE EARLY YEARS PROJECT IN CANADA AND IN MOOSE JAW-SOUTH CENTRAL**

The Understanding the Early Years (UEY) national initiative, funded and managed by the Government of Canada, was created in response to the growing evidence of the importance of the early years. It is a research and community development project designed to enable community members to work together to address the needs of young children. The project focuses on raising community awareness of factors that can influence young children's development and strengthening communities' capacity to use local data to inform decisions so as to enhance children's lives.

The initiative assists communities in learning about their children's readiness to start school, exploring family and community factors that can influence children's development, identifying local programs and services for children and young families, and assessing local socio-economic factors. The partnerships among parents, schools, teachers, community organizations and others interested in the wellbeing of children that are created through the process of conducting a UEY project facilitate sharing of research findings and the implementation of plans to address the needs that the project identifies.

The UEY Initiative was launched in 1999, and has supported many communities across Canada since then. Moose Jaw-South Central is one of seven UEY projects in Saskatchewan. This project was funded for participation for the 2007-10 UEY cycle, along

with projects in Regina, Southeast Saskatchewan, and Prince Albert Grand Council. Earlier UEY projects in Saskatchewan were conducted in Prince Albert (1999-2005), Saskatoon (2000-07) (co-led by Nazeem Muhajarine of SPHERU), and Northeast Saskatchewan (2005-08). The SPHERU team has also assisted with research and analysis on two other UEY projects, in Southeast and Northeast Saskatchewan, in addition to the present project.

### **1.1.1 WHO IS INVOLVED?**

The Moose Jaw-South Central Understanding the Early Years study is a three-year research project funded by the Government of Canada's Understanding the Early Years initiative. The Prairie South School Division is the sponsoring organization and functions as the accountable partner. The South Central Regional Intersectoral Agency (RIC) acts as the Community Coalition. The RIC administers grant funding for community projects for children, youth, and families, and supports broad community development through a regional coordinator. Membership on the RIC represents the following human service agencies, school divisions and community groups:

- Advanced Education and Employment Services
- Assiniboia Child and Youth Agency
- Badlands Recreation
- Parks & Recreation
- Corrections and Public Safety
- Saskatchewan Ministry of Social Services
- Holy Trinity Roman Catholic Separate School Division No. 22
- Local Child Action Community

- Mental Health and Addiction Services, Five Hills Health Region
- Métis Nation Local 160
- Moose Jaw Family Service Bureau
- Moose Jaw Multicultural Council
- Prairie South School Division No. 210
- RCMP & City Police Services
- Saskatchewan Ministry of Education
- Services Canada
- South Central Recreation
- Transition House
- YMCA of Moose Jaw

### 1.1.2 WHAT ARE THE STUDY OBJECTIVES?

The UEY initiative was designed to help communities discover the factors that promote or hinder children’s readiness to learn and to use the insights they develop to take action. One of the long-term outcomes of this study, then, will be the development of a Community Action Plan that capitalizes on existing community strengths and addresses gaps in order to enhance the wellbeing of children.

With a community development approach as its foundation, the Moose Jaw-South Central UEY project focuses on three specific objectives:

1. To build knowledge of child development and parent and community factors (resources, supports, services) that support healthy child development and learning;
2. To mobilize communities to take action based on local research

- evidence, in order to improve the developmental outcomes, wellbeing and competence of the communities’ children;
3. To develop and implement a Community Action Plan to foster child development in a sustainable manner.

### 1.1.3 WHAT DOES THE UNDERSTANDING THE EARLY YEARS INITIATIVE MEASURE?

The UEY initiative was designed to deepen understanding of family and community influences on children’s development from birth to six, as measured at kindergarten. The kindergarten year is an important milestone in child development as it marks the transition from receiving care in a home setting to a formal, structured learning environment in a school setting. This transition requires multiple adaptations, to a new and wider social environment and to the demands of the educational system.

The main outcome studied in this project is children’s “readiness to learn” at kindergarten age<sup>1</sup>. In the study context, readiness to learn is understood to be a broad and holistic concept that is very similar to the concept of healthy development. It is assessed by measuring children’s physical, social, emotional, language and cognitive skills

---

<sup>1</sup>While widely used, the term “readiness to learn” is contested. Some argue that the term is too vague, that children are, in fact, born ready to learn, and that, as it is commonly used, it ignores the interplay between children and schools, because just as children need to be ready for school, schools also need to be ready to receive all children (Andrews & Slate, 2001; Emig, 2000; Pianta, 2002). In this report, readiness to learn is used specifically to refer to the multidimensional concept measured by the EDI. An alternate, our preferred term, “school readiness,” will be used interchangeably with “readiness to learn” in this report.

using the Early Development Instrument (EDI) (Janus & Duku, 2007; Janus & Offord, 2007).

Children are born “ready to learn,” meaning that their nervous systems are equipped with the capacity to learn and develop. Neuroscience research has shown that learning begins *in utero* and continues throughout life, with the first five years being the most rapid period of brain development (Janus, 2006). How well these early years prepare children for the rest of their lives depends not only on their inherent abilities, but also on the extent to which they experience nurturing relationships and stimulating environments. By the time they begin kindergarten, differences in children’s opportunities have already created significant disparities in what they know and can do, which in turn determine the degree to which they are able to benefit from the learning opportunities that school provides (Shonkoff & Phillips, 2000).

Research, including work conducted for UEY nationally, has repeatedly shown that a kindergarten teacher’s assessment of a child’s readiness to learn is the single strongest predictor of academic success in early grades. Subsequently, success in early grades is a strong predictor of high school completion, and measures to improve children’s readiness to learn in kindergarten are protective against both dropping out before completing high school and adolescent delinquency. Research done by SPHERU and many others has shown that children who are successful in school tend to be successful in other areas of their lives, maturing into successful adults overall (Doherty, 1997).

If healthy development in the early years is necessary for successful outcomes in adulthood, such as attaining participation in the labour force or realizing individual life goals, it follows that developmental deficits stand in the way of achieving full human potential. This is why developmental measures such as readiness to learn are so important. Seen from this perspective, readiness to learn is much more than identifying developmentally vulnerable children in kindergarten. There are strong societal imperatives for ensuring that optimal human capital development is achieved. Canada’s aging population will increase the productivity expectations of active labour force participants. As the labour market demand for knowledge workers increases and the demand for manual labour declines, child developmental deficits may become increasingly important for understanding differences in outcomes in adulthood, and eventually whether we are losing or gaining ground as a successful and prosperous society.

But, as mentioned above, child development unfolds within the context of families, neighbourhoods and communities. This is why the UEY initiative measures factors in communities that may influence children’s school readiness. Two types of community factors are examined in this report: access to and availability of resources, and social risk. The first was assessed by surveying programs for children from birth to age six and their caregivers in the region, referred to as the “Inventory of Community Programs and Services.” To measure social risk within communities, we constructed an index using socio-demographic indicators from 2006 Census data. Both these variables are described in greater detail later in the report.



At the national level, the UEY initiative produces a snapshot of children in Canada as a whole, as well as monitoring changes in kindergarten students over time. Another valuable aspect is that it provides information on children's developmental outcomes and school readiness within neighbourhoods, communities, and regions, allowing community members to compare the information collected about children in their area to provincial and national norms. In this way, educators, program planners and policy-makers can make decisions based on local data, with the welfare of all Canadian children in mind.

*Readiness to learn is much more than identifying developmentally vulnerable children in kindergarten. There are strong societal imperatives for ensuring that optimal human capital development is achieved.*

## 2 | How the Study was Conducted

In this section, we begin by describing the characteristics of the Moose Jaw-South Central Region in which the study was carried out, followed by an explanation of how the region was divided into smaller study areas. Next we explain the three variables that were measured in the main UEY study—readiness to learn, social risk, and resource availability—and the maps that were created to present the results. Following this, we describe the parent interviews and the direct assessments that were carried out with a subset of the families involved in the UEY study, and the information gathered on births in the region.

### 2.1 THE MOOSE JAW–SOUTH CENTRAL REGION

The South Central region of Saskatchewan is comprised of a rich and culturally diverse population of small rural communities, the city of Moose Jaw, Hutterite colonies, and French and Métis populations. Local communities are rich in multiculturalism and heritage and demonstrate a strong sense of community values through collective initiatives, interests and supports. In 2007 Moose Jaw was named one of Canada’s “Cultural Capitals” (City of Moose Jaw, 2009). Community members share a sense of belonging and ownership through membership in recreational facilities, sports teams, libraries, drop-in centres and schools. Communities’ sense of identity is also based on a shared economic base and natural flow of trading patterns to the larger service centres. The region’s economy is primarily agriculture-based, with main industries in manufacturing, service and retail.

Geographically, the region extends from the United States border to Craik, about an hour’s drive north of the city of Moose Jaw, covering 29,000 km<sup>2</sup> and including an overall population of approximately 55,000. There are approximately 43 communities within the boundaries, with four different school systems operating (Public, Catholic, French and Independent). More than 9000 students are served by 48 schools located within 28 communities. Schools are located in the five Hutterite Colonies; seventeen small rural communities (population < 500); five rural-urban communities (population of 500 to 2700); and in the city of Moose Jaw (population of 33,000) (see Map 2.1).

The population of Moose Jaw, the largest city in the South Central region remained stable between 2001 and 2006. With an area of 46.8 km<sup>2</sup>, the city’s population density is 686.4/km<sup>2</sup>. Moose Jaw is located on the Trans-Canada Highway, approximately 65 km west of Regina. The Moose Jaw area is a tourist centre featuring the Temple Gardens Mineral Spa, the Tunnels of Moose Jaw, and Casino Moose Jaw. Moose Jaw is also home of the Snowbirds, Canada’s Military Aerobatic Demonstration Team, NATO Flying Training in Canada Program (NFTC) and is the Saskatchewan headquarters for the Canadian Pacific Railway.

The rural communities in South Central Saskatchewan are rich in culture, tradition and history. There is much to see and experience. Festivals, rodeos and regional parks liven up the summer months,

along with the local museums that showcase each community's history. The vibrant Francophone community of Gravelbourg is home to the architecturally beautiful Cathedral Notre Dame. Not too far away, one may visit the Shurniak Art Gallery in the town of Assiniboia or travel to Rouleau to see where the well-known Canadian sitcom "Corner Gas" was originally filmed. Other notable tourist attractions include the St. Victor Petroglyphs, Big Muddy Badlands and Outlaw Caves, and the Chaplin Nature Centre, a shorebird reserve of global significance.

## 2.2 STUDY AREAS

This UEY project was conducted in the South Central region of Saskatchewan as defined by the boundaries of the Prairie South School Division (PSSD). The PSSD is a recent amalgamation of rural and urban school divisions in the area. The Five Hills Health Region has similar boundaries; it serves most of the population in the study region, with the exception of Bengough and Coronach, which are served by the Sun Country Health Region, and Mankota, served by the Cypress Health Region. While the PSSD boundaries were used to define the UEY region, there are two other educational partners participating in the project, the Holy Trinity Roman Catholic Separate School Division No. 22 and École Ducharme (an independent, designated French school located in Moose Jaw). In the 2006 Census, there were 3225 children from birth to age six in the study region.

In order to make the knowledge developed in this study as useful as possible to communities, the region was divided into smaller study areas or "neighbourhoods."<sup>2</sup> The project management committee

used the school catchment areas to define seven study areas within the city of Moose Jaw, while rural study areas followed the former school division boundaries (prior to amalgamation), resulting in a total of 10 areas (see Map 2.1). Although rural study areas may not represent a true neighbourhood as commonly understood in an urban community, the former school division boundaries generally coincided with patterns of service usage. The downtown core of Moose Jaw was not identified separately as a neighbourhood, but rather runs through King George into East End.

The only drawback of using these pre-existing administrative boundaries to define the study areas is that it resulted in three study areas having 30 or fewer kindergarten students (see Table 2.1), which is less than the minimum generally recommended for using the EDI. This means that the results in these three study areas (South Hill East, the William Grayson area, and Rural Southwest) should be viewed with caution, as the small numbers make the results less stable than in other areas.

As Table 2.1 indicates, the Rural North study area had the greatest absolute number of children from birth to age six (510 children).

---

<sup>2</sup> Although the term "neighbourhoods" is used increasingly in research, planning and policy making, an authoritative or commonly accepted definition is difficult to find (Muhajarine, Vu, & Labonte, 2006). In some population centres, usually urban, there are commonly accepted understandings of how neighbourhoods are defined and what a neighbourhood constitutes. In this report we use this term only when referring to the urban areas and not the rural, chiefly because we believe that the term is not relevant to the study setting. Instead, we use the term "study areas" to refer to the three rural areas that have been agreed to by key stakeholders as being sub-areas of interest for analysis and study.



Study area	Total population	Number of children 0-6 (% of total population)	Number of kindergarten students assessed with EDI
Moose Jaw- South Central	52710	3225 (6.1%)	537
South Hill West	5120	400 (7.8%)	80
South Hill East	2910	220 (7.6%)	24
East End	4525	225 (5.0%)	47
William Grayson area	2325	200 (8.6%)	22
King George area	6150	400 (6.5%)	74
Palliser Heights	5720	345 (6.0%)	61
Sunningdale	4255	285 (6.7%)	53
Rural North	9330	510 (5.5%)	70
Rural Southeast	8125	380 (4.6%)	68
Rural Southwest	4255	255 (5.9%)	30

Table 2.1 Population of study areas

However, relative to the total population, William Grayson, South Hill West and South Hill East had the highest proportion of children from birth to age six (about 7-9% of the population).

### 2.3 VARIABLES USED IN THE STUDY

In this report, we present data on the school readiness of children attending kindergarten in each of the study areas, in relation to two types of community-level factors: social risk and the availability of and access to resources, along with additional developmental and contextual information collected from a subgroup of children and their parents. We also include information on at-risk births in the region during the years 2002 to 2009. In the next sections, we describe how these variables were measured.

#### PHYSICAL HEALTH & WELLBEING

**Physical readiness for school day** Never or almost never come to school dressed inappropriately for activities, school tired, late or hungry.

**Physical independence** Independent looking after their needs, have an established hand preference, are well coordinated, and do not suck a thumb/finger.

**Gross and fine motor skills** Excellent ability to physically tackle the school day, with excellent or good gross and fine motor skills.

#### SOCIAL COMPETENCE

**Overall social competence** Excellent or good overall social development, very good ability to get along with other children and play with various children, usually cooperative and self-confident.

**Responsibility and respect** Always or usually show respect for others, and for property, follow rules and take care of materials, accept responsibility for actions, show self-control.

**Approaches to learning** Always or usually work neatly, independently, and solve problems, follow instructions and class routines, easily adjust to changes.

**Readiness to explore new things** Curious about the surrounding world, and eager to explore new books, toys and games.

#### EMOTIONAL HEALTH & MATURITY

**Prosocial and helping behaviour** Help others who are hurt, sick or upset, offer to help spontaneously, invite bystanders to join in.

**Anxious and fearful behaviour** Rarely or never display anxious behaviours like worrying or crying, happy and able to enjoy school, comfortable being left at school by caregivers.

**Aggressive behaviour** Rarely or never behave aggressively; do not use aggression to solve a conflict, do not have temper tantrums, and are not mean to others.

**Hyperactivity and inattention** Able to concentrate, pay attention, settle to chosen activities, wait their turn, and most of the time think before doing something.

#### LANGUAGE & COGNITION

**Basic literacy skills** Have all the basic literacy skills: know how to handle a book, can identify some letters and attach sounds to some letters, show awareness of rhyming words, know the writing directions, and are able to write their own name.

**Interest in literacy/numeracy** Show interest in books and reading, math and numbers, and have no difficulty remembering things.

**Advanced literacy skills** Have at least half of the advanced literacy skills: reading simple, complex words or sentences, writing voluntarily, writing simple words or sentences.

**Basic numeracy skills** Have all the basic numeracy skills: can count to 20 and recognize shapes and numbers, compare numbers, sort and classify, use one-to-one correspondence, and understand simple time concepts.

#### COMMUNICATION & GENERAL KNOWLEDGE

**(no sub-domains)** Have excellent or very good communication skills; can communicate easily and effectively, participate in story-telling and imaginative play, articulate clearly, show adequate general knowledge, and are proficient in English or French.

Table 2.2 Characteristics of Children 'Ready to Learn' in EDI Domains and Sub-Domains

### 2.3.1 READINESS TO LEARN

To measure kindergarten students' readiness to learn, UEG projects use the Early Development Instrument (EDI), a 104-item questionnaire developed by Dan Offord and Magdalena Janus at the Offord Centre for Child Studies at McMaster University. The EDI requires kindergarten teachers to evaluate each of their students in five areas, called domains: physical health and wellbeing; social skills; emotional maturity; language and cognitive development; and communication skills and general knowledge (Janus, 2006). Table 2.2 presents the five domains and their sub-domains and describes the characteristics of children who are 'ready to learn' within each sub-domain. It is important to note that the EDI was developed to report on the outcomes of groups of children, such as classes or communities; it is not intended as a screening or diagnostic tool or to assess an individual child's progress.

For this report, each kindergarten student in the region was assessed in the middle of the 2008-09 school year (i.e., February-March) by his or her teacher using the EDI.

### 2.3.2 SOCIAL RISK INDEX

The social, economic and demographic characteristics of communities are known to have an impact on school readiness among young children in these communities. To assess these characteristics, we developed a social risk index made up of the following six indicators taken from the 2006 Census,<sup>3</sup> each of which has been shown in many studies to be associated with adverse outcomes for children:

1. Single parent families (percentage of households with children aged 0-6 years headed by single parent)
2. Low education (percentage of population 15 years and over with less than Grade 12 education)
3. Transience (percentage of population that had moved at least once in the preceding year)
4. Home rental (percentage of households renting primary abode)
5. Receipt of government transfers (percentage of families receiving Employment Insurance, Canada Pension Plan, Child Tax Benefits, Social Assistance, Old Age Security, or Workers Compensation)
6. Below Low Income Cut-off (percentage of families and unattached individuals aged 15 years and over whose income fell below the low-income levels established by Statistics Canada)

The average value for each of the indicators in a study area was compared with the average for Saskatchewan as a whole and if it fell above the Saskatchewan average, a score of "1" was assigned. We then summed the scores for each study area across the six indicators to obtain the Social Risk Index (SRI) score.

Figure 2.1 shows the SRI scores for the study areas. Moose Jaw's neighbourhoods

<sup>3</sup> While the formula used to construct the SRI in this report is the same as that used in the 2008 Community Mapping Report, the numbers here are based on 2006 Census data, while the previous report used the 2001 Census data. Thus there are some differences between the SRI scores in the study areas, reflecting changes over time.



show great variation, with scores ranging from a low of 0 in Palliser Heights, to the highest possible score of 6 in two areas (East End and William Grayson). The rural study areas scored 1 or 2. Detailed information on the components of the SRI for each study area is presented in Appendix A. As it shows, the indicator for which study areas were most likely to be above the provincial average was receipt of government transfers (7 study areas), followed by low education (5 study areas).

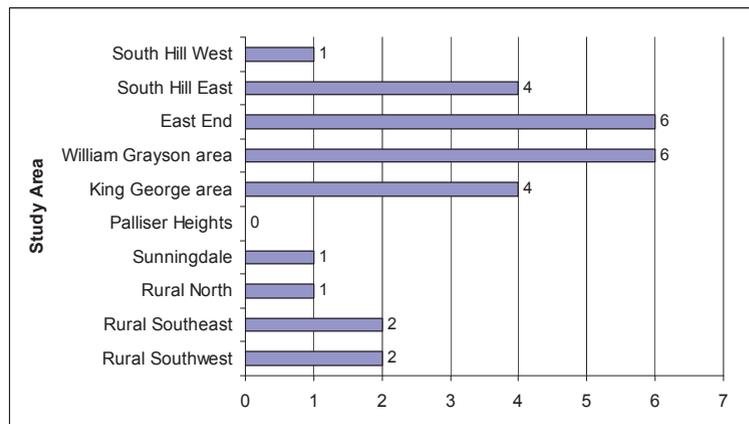


Figure 2.1. Social Risk Index score by study area

This approach to creating a social risk score has some limitations. First, the rural study areas encompass a wide geographic area that may include communities at both ends of the SRI. Thus, the overall rating of low to moderate risk could conceal the presence of communities with very high and very low risk. A more accurate approach would examine risk indicators for much smaller

geographical units (such as Census Dissemination Areas), but given the small numbers of children in these rural areas, they could not be divided any further.

Another challenge in creating a SRI is taking into account the relative importance of the component indicators. Is the average level of educational attainment in a community, for example, as influential as the level of poverty? Relatedly, how far above or below the reference average does an indicator need to be in order to be significant? These complexities are not taken into account in our SRI: Each indicator carries the same weight and is scored as '1' if it is above the Saskatchewan average by any amount or '0' if it is the same or less. So, for example, Sunningdale received a score of '1' for home rentals because 26.3% of its households are renters, slightly higher than the provincial average of 25.6%, and East End also received '1' for this variable, with almost twice as many households renting (49.4%).

### 2.3.3 RESOURCE ACCESS AND AVAILABILITY

In addition to the socio-demographic makeup of a community, children's readiness to learn may be influenced by the services and programs that have been developed to meet their needs and those of their families. For each study area, resource availability scores were calculated to describe the extent of programming for children and families in that area. Scores were based on the information collected from the Inventory of Community Programs and Services survey and from lists compiled for other relevant resources or facilities, adjusted for accessibility. The information used was current as of December 2009.

Each program enumerated in the survey was designated to one of the study areas by postal code and dissemination area of program location. The number of programs in each study area was counted create the Resource Access and Availability (RAA) score. As shown in Figure 2.2, scores ranged from 7 in the William Grayson area to 41 in the Rural North and the Rural Southeast.

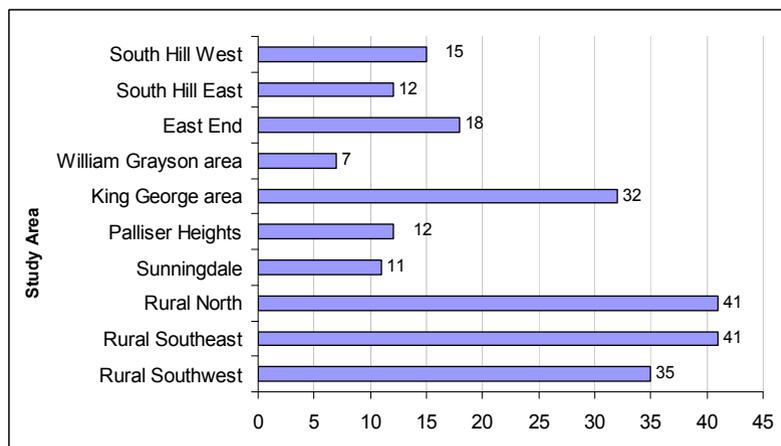


Figure 2.2. Resource Availability Score by study area

A number of issues complicate this assessment of resources. First, just because programs and services are available does not mean that they will be used; their accessibility is also important. Barriers to accessibility include lack of transportation, inconvenient hours of operation, unaffordable fees, and buildings inaccessible to people with physical handicaps. However, barriers to access will have a differential impact depending on the resources and needs of

individual families; for example, the extent to which a program fee represents a barrier will likely be dependent on families' incomes, and families who do not own a vehicle may find it difficult to access programs even a short distance away. We were unable to assess the accessibility of the resources enumerated in this report and thus the scores reflect only their availability.

Second, resources located in a given study area are not provided exclusively to residents of that area; their clientele may be quite widespread. In particular, the small size of Moose Jaw makes it relatively easy for families to access services and programs outside their own neighbourhood (although, as noted above, this may depend on owning a vehicle). Even in the rural areas, many people in small communities travel to other nearby towns to utilize services and participate in programming, as was noted in the 2008 Community Mapping Report. Because of the complexity involved in tracing patterns of program usage, resource availability scores are based solely on programs available within the boundaries of each study area. However, this limitation is mitigated at least in part by the fact that patterns of service use were one of the factors considered when defining the study areas.

Finally, while the inventory was intended to include only programs aimed primarily at children from birth to six years of age or their parents, a few of the services and programs we included, such as recreational classes and libraries, have a broader target group.

## 2.4 COMBINING SCHOOL READINESS, SOCIAL RISK, AND RESOURCE SCORES IN MAPS

Findings in this report are presented in the form of maps in order to provide a visual representation of the data by study area. A map is a valuable tool that can depict what is happening in communities and communicate findings in a straightforward and simple way (Policy Link, 2008). The maps were created using ArcGIS software, and make use of colour coding to simultaneously present the results for two variables (e.g., EDI score and resource availability score) by study area.

In these maps, the SRI and resource availability scores are simply the numbers for each study area, measured as described in the preceding sections. The scores for all the study areas in the region were divided into four groups; the colour of the study area indicates the group, as explained in the map key. It should be noted that for the SRI, a higher score indicates greater risk (i.e., a less positive environment), while for resource availability, a higher score reflects more resources (i.e., a more positive environment). The way in which EDI results are presented is more complicated and thus requires a detailed explanation.

The researchers who developed the EDI have created a set of normative data using the scores from 176,621 kindergarten children from seven provinces. This group can be considered representative of all Canadian children. This group's scores were ordered from lowest to highest, and the top 75% of children defined as being school ready, while the lowest scoring 25% is considered not ready. Among the children who are deemed not ready, those who score in the bottom

10% are considered vulnerable, while children in the next 15% are considered at risk for poor outcomes in school (see Figure 2.3).

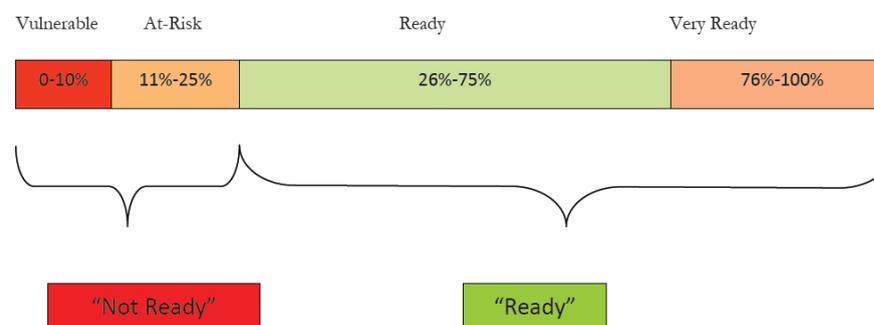


Figure 2.3. Categories of EDI scores

One way of evaluating how 'school ready' children in a particular community are, then, is to compare them to this normative group, by using the normative cut-off scores to classify children from the community being studied. For example, children in the normative group scoring 7.17 or below on the domain of emotional maturity fall into the lowest 25% and are therefore considered 'not ready.' By calculating the percentage of children in a community who score 7.17 or below, we can assess whether that community differs from the normative group in terms of whether it has more or fewer children who are 'not ready' for school with regard to emotional maturity. This is considered a better way to assess how children in a community are faring than comparing the average EDI scores, because averages do not provide information on the distribution of scores; in other words, two communities could have the same average, but in one this could be because most scores are tightly

clustered around the average, while in the other, it could reflect a wide range, from very low to very high.

This report maps EDI results in terms of the percentage of children considered vulnerable (based on the cut-off points for the bottom 10% of the normative group) in each of the five domains listed in Table 2.2. The appropriate interpretation of vulnerability is that the child is, on average, more likely to be limited in his or her development than a child who scores above the cut-off. The percentages of vulnerable children in each study area were divided into quartiles; the size of the dot on a particular study area indicates which quartile it fell into. The maps also include the percentage of children in the normative group considered vulnerable for each domain, ranging from 9.6% to 12.2%. If the percentage of children in a study area scoring in the vulnerable range is higher than the norm, this indicates that the area is worse off for that domain than Canadian children in general; if fewer are considered vulnerable, the study area is doing better than the norm.

We also present the percentages of children who scored low on each sub-domain. In this context, 'low' means falling below the 'challenge cut-off' scores set by the EDI developers. These cut-offs identify children who have no skills or poor skills in the sub-domains and are described in detail in Appendix B. So vulnerability in a domain is assessed in comparison to the Canadian normative group, while being challenged in a sub-domain means not achieving a minimum level of skills or behaviour.

## 2.5 PARENT INTERVIEWS AND DIRECT ASSESSMENTS OF CHILDREN SURVEY

A representative subgroup of families in the Moose Jaw-South central region was additionally studied using the Parent Interviews and Direct Assessments of Children Survey (PIDACS). PIDACS is another tool that UEY projects use to gather information about children's learning, social skills and behaviours, and physical health and wellbeing. Information is also collected on family, neighbourhood and community characteristics associated with child outcomes. In this way, PIDACS complements what the EDI and the SRI and RAA scores reveal by providing additional perspectives on children's development and their communities.

PIDACS has been completed in 21 UEY communities across Canada with a total of 8,834 children. This sample has been used to establish a Canadian average for each child outcome, family, and neighbourhood characteristic. The results from Moose Jaw-South Central, then, are compared here against the national averages when possible in order to see how the children of this region are faring compared to the general Canadian population. Because of the small number of children and parents studied, the results are not reported by study area, but by two sub-regions: Moose Jaw (the seven Moose Jaw study areas) and Rural South Central (the three rural study areas).



### 2.5.1 DIRECT ASSESSMENT OF COGNITIVE DEVELOPMENT

The direct assessments were conducted in person with the child by a trained assessor at the school and measure the child's development in three developmental areas: early literacy skills, number knowledge, and receptive language. In the Moose Jaw-South Central region, 392 kindergarten students were directly assessed.

Early literacy skills are determined through an assessment tool called *Who Am I?*. Children are asked to copy five shapes and to write their name, numbers, letters, words, and one sentence. The number knowledge assessment determines children's ability to understand quantity (more versus less), to count objects, determine number sequences, and complete simple arithmetic. Children are assessed orally.

Children's receptive language abilities are measured using the *Peabody Picture Vocabulary Test, Revised* (PPVT-R). This measure assesses the vocabulary that children can comprehend verbally. The assessor says a word to the child, and then the child must choose one out of four pictures that corresponds to the word.

Children's number knowledge is assessed with the *Number Knowledge Test*, which gauges children's intuitive knowledge of numbers by assessing their understanding of quantity (more versus less), their ability to count objects, their understanding of number sequence, and their ability to do simple arithmetic.

All scores on the cognitive assessments are scaled to have a mean of 100 and a standard deviation of 15 for the Canadian PIDACS sample. Children who score below 85 are considered to have a low level of development in each area.

### 2.5.2 PARENT INTERVIEW

The parent interview was conducted via telephone or Internet with the person most knowledgeable about the child, usually the mother, on a range of topics described in detail below. In the Moose Jaw-South Central region, 334 parents or guardians were interviewed.

#### BEHAVIOURAL OUTCOMES

Parents were asked how they perceive their children's behaviour both within the home and in the community, focusing on three types of behaviour:

physical aggression, inattention, and positive social behaviour. Physically aggressive children are often hostile and aggressive towards others, while the inattentive child is restless, finds it very difficult to concentrate, and is often hyperactive. Positive social behaviour includes helping and comforting peers and inviting others to play.

*Vulnerability in a domain is assessed in comparison to the Canadian normative group, while being challenged in a sub-domain means not achieving a minimum level of skills or behaviour.*

Each of these three behavioural scales is based on several questions with three possible answers for each item: 'never' (scored 0); 'sometimes' (1); or 'often' (3). Children whose average score is greater than 1.0 are considered to have a behavioural problem, with the exception of positive social behaviour where children are classified as having 'low pro-social behaviour' if they receive an average score less than 1.0.

#### **CHILDREN'S HEALTH OUTCOMES**

Parents were asked general questions regarding their children's physical and mental health, chronic conditions, and functional health problems. In terms of mental health, anxiety and depressive symptoms were assessed. Children with anxiety problems tend to be fearful, worried, nervous, high-strung, and tend to cry more than their peers. Children with depressive symptoms often feel unhappy or sad, and may have trouble enjoying activities.

The measures of depression and anxiety were each comprised of several questions with three possible responses for each item: 0 for never, 1 for sometimes and 3 for often. A child was categorized as having anxiety or depressive symptoms if their average score was greater than 1.0.

Chronic conditions include allergies, digestive problems, heart conditions, asthma, mental handicaps, learning disabilities, and emotional, psychological, and nervous difficulties. Functional health problems are physical, mental, or health conditions that limit the amount or kind of activity the child can engage in.

#### **FAMILY FUNCTIONING AND MATERNAL DEPRESSION**

Family functioning refers to the cohesiveness and adaptability of the family, and captures how well the family functions as a unit. Research has shown that better family functioning contributes positively to children's development, especially their behaviour (Racine & Boyle, 2002).

The parent interview assesses family functioning through 12 items that measure familial communication, decision-making, and the ability to get along and feel accepted for who they are. Scores on this measure range from 0 to 36. A low-score threshold is set at 12; families with scores below 12 are considered to have extremely low family functioning.

Maternal depression was also assessed through the parent interview. Depression in mothers has been found to affect interactions with their children, leading to poorer social and cognitive developmental outcomes (Murray & Cooper, 1997). Mothers were asked to indicate their degree of agreement or disagreement with ten statements about their feelings and behaviours during the previous week, such as, "I felt that I could not shake off the blues, even with help from my family or friends," "I felt lonely," and "I had crying spells." Available responses range from "rarely or none of the time" to "most or all of the time." In this report, a low-score cut-off of 0.75 was used to identify mothers who reported signs of depression.

## PARENTING

Three aspects of parenting were assessed by the parent interview: love and support, authority, and engagement. The love and support scale measures the extent to which parents are loving, responsive to the child's needs, and recognize the child's individuality. Parents who are loving and supportive tend to praise their children more, and are warm and expressive. Parents who score low on this measure tend to be harsh, neglectful, or detached. The authority scale measures parents' efforts to socialize their child into the family and society by providing supervision, and expecting mature behaviour and demanding compliance. Parents scoring high on this scale set clear boundaries and consistently reinforce appropriate behaviour. Engagement assesses the amount of time parents engage positively with their children, including, for example, reading together or playing games. Scores range between 0 and 10.



In combination, the two parenting practices of love and support and authority have been used to define four types of parenting styles. As shown in Table 2.3, parents high in both love and support and authority are considered to use an 'authoritative' parenting style; children of these parents have been shown to have better developmental outcomes according to several studies (Chao & Willms, 2002). In contrast, parents

who are loving and supportive but lack authority are termed 'permissive,' while those who are high on 'authority' but less loving and supportive are considered 'authoritarian.' Parents who are less loving and supportive and who do not adequately monitor their children's behaviour are said to demonstrate a 'neglectful' parenting style.

## COMMUNITY ACTIVITIES AND RESOURCES

Parents were asked several questions about their children's involvement in community activities in two domains: extracurricular and literacy. Extracurricular activities include participation in sports with a coach, organized physical activities (e.g., dance, gymnastics, martial arts), unorganized physical activities (e.g., running, biking), music lessons, and community programming. Literacy activities include looking at books, magazines or comics, completing puzzles, playing with pencils and writing, and reading books.

		Love and Support	
		<i>High</i>	<i>Low</i>
Authority	<i>High</i>	Authoritative	Authoritarian
	<i>Low</i>	Permissive	Neglectful

Table 2.3 Four types of parenting styles: Authoritative, Authoritarian, Permissive, and Neglectful

Parents were also asked about their children's use of community resources within the following three categories: recreational resources; entertainment and cultural resources; and educational resources. Recreational resources include parks, play spaces and recreational trails, beaches, swimming pools, skating rink, recreational or community centres, and parks and campgrounds. Entertainment and cultural resources include sporting events, movies, museums, art galleries or exhibits and plays or musical performances. Educational resources include libraries or bookmobiles, book clubs and reading programs, family resource centres or drop-in programs, and educational or science centres. Children's use of these resources and involvement in activities is important for their cognitive and physical development.

### CHILD CARE

Parents' use of child care was assessed by asking them: "While you and your spouse/partner are at work or studying, do you currently use child care such as daycare, babysitting, care by a relative or other caregiver, or a before and after school program?" Parents indicated whether or not they used any of these types of child care and if so, for how many hours per week.

### NEIGHBOURHOOD CHARACTERISTICS

Three types of neighbourhood characteristics were measured in the parent interview: overall quality, cohesion, and safety. The neighbourhood or community is the immediate environment in which parents and young children live and as such, plays an important role in shaping children's development. A neighbourhood

has high quality if it has many other families with children, good schools and nursery schools, adequate facilities for children, such as playgrounds and pools, good health facilities, actively involved residents, and accessible public transportation. Neighbourhood cohesion refers to whether neighbours are close and support each other. In cohesive communities, neighbours help each other and get together to deal with problems when they arise; there are adults in the neighbourhood that children can look up to, parents watch out to make sure children are safe and neighbours keep their eyes open for possible trouble. Neighbourhoods with high levels of perceived safety are safe to walk alone in at night, safe for children to play outdoors during the day, and have reliable adults within the neighbourhood to make sure children are safe.

For each of these three scales, responses can range from 0 to 10, with 5 being neutral. Average ratings above 5 indicate the neighbourhood has high quality, cohesion or safety.

The social support parents receive from family and friends was also measured. In communities with high levels of social support, parents feel they have someone to turn to, people who care about their problems and wellbeing, and people surrounding them with similar interests, attitudes and concerns. Responses for social support are also rated on a 10-point scale with 5 being a neutral



response. However, a higher cut-off point of 6.67 was used to define a high level of social support, since responses were skewed towards the positive.

## 2.6 AT-RISK BIRTHS

While the main focus of this report is the EDI and the information it provides on children in their kindergarten year, we also had access to information on births in the Moose Jaw-South Central region for the years 2002 to 2009.

This is important to consider, because while some challenges to development are acquired during the first years of life, others are already present at birth.

The information presented here was collected using the In-Hospital Birth Questionnaire (IHBQ), which consists of 26 items in three areas important to healthy infant and child development: health challenges (e.g., Down Syndrome, cerebral palsy); developmental factors (e.g., high or low birth weight, difficulties during pregnancy or birth), and family interaction factors (e.g., mother's age, social support, financial situation, mental health). All women giving birth in hospital are asked to complete the questionnaire before they are discharged; the response rate each month during the period under consideration varied from about 40% to 98%.



Responses to the 26 items are differentially weighted and summed, resulting in a Total IHBQ score. Births scoring 9 or above are considered 'at-risk,' meaning that the child has an elevated chance of poor development. Some examples of situations in which the birth would score 9 or greater are: mother aged 15 or less; mother used alcohol or drugs during pregnancy; postpartum depression; as well as various combinations of lower-weighted items.

*In cohesive communities, neighbours help each other and get together to deal with problems when they arise; there are adults in the neighbourhood that children can look up to, parents watch out to make sure children are safe and neighbours keep their eyes open for possible trouble.*

# 3 Findings

This section begins by presenting the number of children from birth to age six in the region, followed by two main sub-sections—school readiness by study area and the PIDACS findings. We then look at the question of whether children who had attended pre-school or pre-kindergarten did better on the EDI than those who had not, and examine the patterns of at-risk births over time, across study areas, and in relation to other factors.

## 3.1 NUMBER OF CHILDREN

Maps 3.1 and 3.2 show the total number of children aged 0-6 across Moose Jaw-South Central’s ten study areas accompanied by the SRI and RA scores, respectively.

## 3.2 SCHOOL READINESS

How does the school readiness of children in the Moose Jaw-South Central region compare to that of the normative group of Canadian children? Figure 3.1 below shows the percentage of children in Moose Jaw-South Central who were ready, at risk, and vulnerable within each EDI domain. As it reveals, children in Moose Jaw-South Central were ahead of the Canadian norm in all five EDI domains, with a higher proportion considered ready for school (more than the norm of 75%) and a lower proportion falling into the vulnerable category (under the norm of 10%).

More informative, however, is the analysis of EDI results by study area. In the sub-sections that follow, we present the results for each of the five domains of the EDI, examining the percentage of children

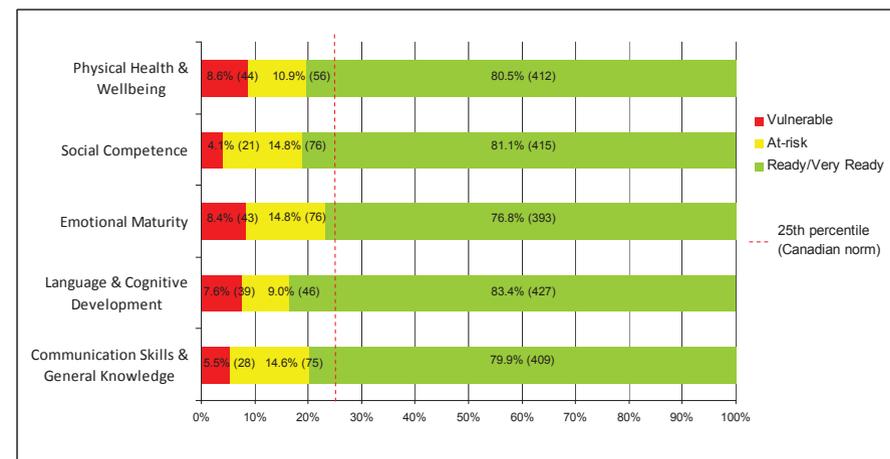
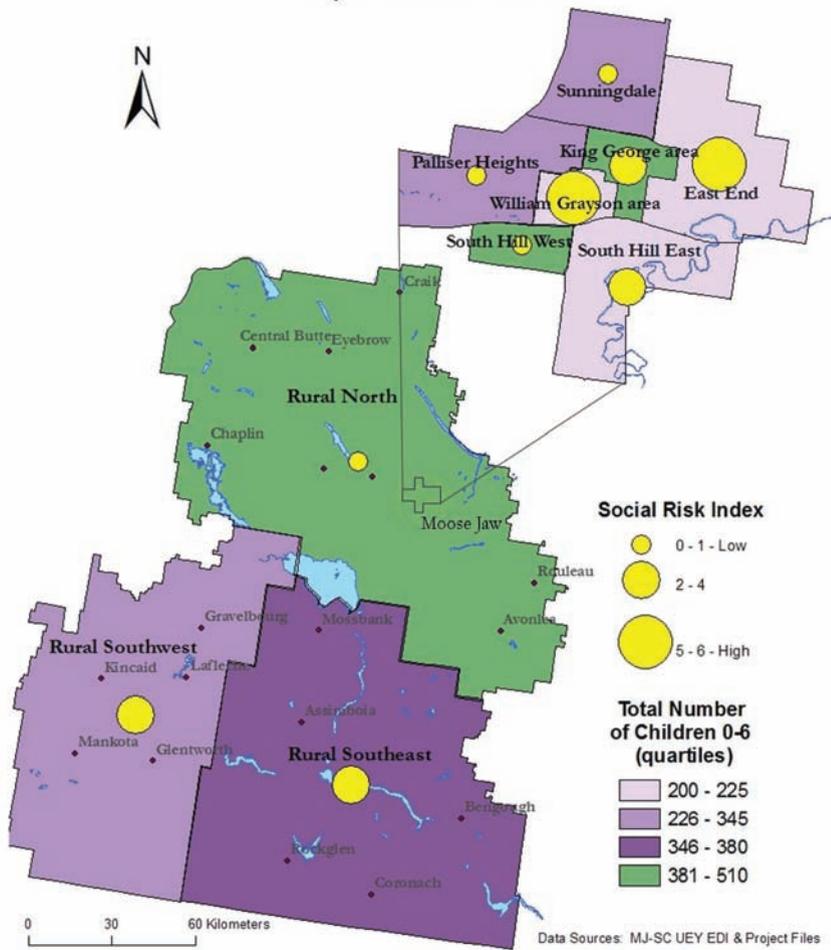


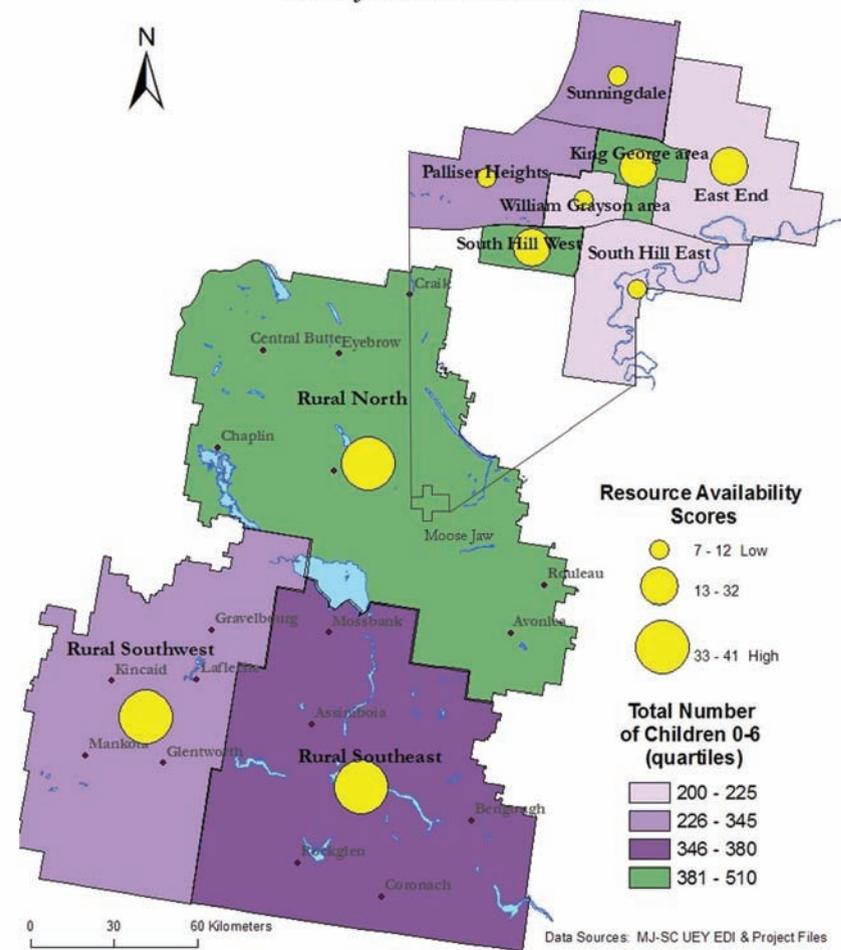
Figure 3.1. Percentage of children in Moose Jaw-South Central who are Ready/Very Ready, At Risk, and Vulnerable by each domain

considered vulnerable in each study area in relation to the other study areas, by dividing the areas into quartiles, shown in the form of maps. The maps also include the SRI and RA scores for each study area. In addition to the maps, we include tables that present the percentages and numbers of children who are considered vulnerable in the domain and challenged for each sub-domain, with the Canadian normative percentage (as well as the MJ-SC region as a whole) for comparison; the results for the sub-domains are also presented in the form of graphs. Including the actual number of children who are vulnerable or challenged, in addition to the percentage, is important because these numbers vary considerably, related to the total number of children in each study area.

**Map 3.1**  
 Total Number of Children (0-6) & Social Risk Index -  
 Moose Jaw - South Central UEY



**Map 3.2**  
 Total Number of Children (0-6) & Resource Availability Scores -  
 Moose Jaw - South Central UEY



### 3.2.1 PHYSICAL HEALTH AND WELLBEING

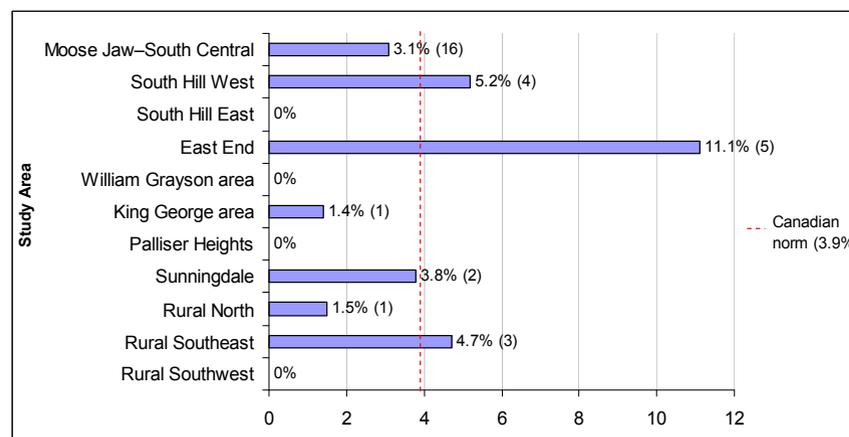
This domain refers to the child’s physical readiness for the school day, physical independence, and gross and fine motor skills. Children scoring in the lower range on this domain can generally be characterized as having average or poor fine and gross motor skills, sometimes coming to school tired or hungry, usually clumsy, and with flagging energy levels. In contrast, those scoring in the higher range are physically ready to tackle a new day at school, generally independent, and have excellent motor skills.

Study area	Physical health & wellbeing	Physical health & wellbeing sub-domains		
		Physical readiness	Physical independence	Gross & fine motor skills
Canadian sample	11%	3.9%	8.9%	21.8%
Moose Jaw–South Central	8.6% (44)	3.1% (16)	10.2% (52)	22.7% (116)
South Hill West	10.4% (8)	5.2% (4)	16.9% (13)	15.6% (12)
South Hill East	4.2% (1)	0% (0)	8.3% (2)	4.2% (1)
East End	15.6% (7)	11.1% (5)	11.1% (5)	15.6% (7)
William Grayson area	0% (0)	0% (0)	4.8% (1)	4.8% (1)
King George area	5.8% (4)	1.4% (1)	7.2% (5)	11.6% (8)
Palliser Heights	5.1% (3)	0% (0)	5.1% (3)	22.0% (13)
Sunningdale	7.7% (4)	3.8% (2)	5.8% (3)	48.1% (25)
Rural North	4.6% (3)	1.5% (1)	9.2% (6)	18.5% (12)
Rural Southeast	18.8% (12)	4.7% (3)	17.2% (11)	45.3% (29)
Rural Southwest	6.9% (2)	0% (0)	6.9% (2)	24.1% (7)

**Table 3.1. Percentage (number) of children considered vulnerable in physical health and wellbeing domain and challenged in sub-domains.**

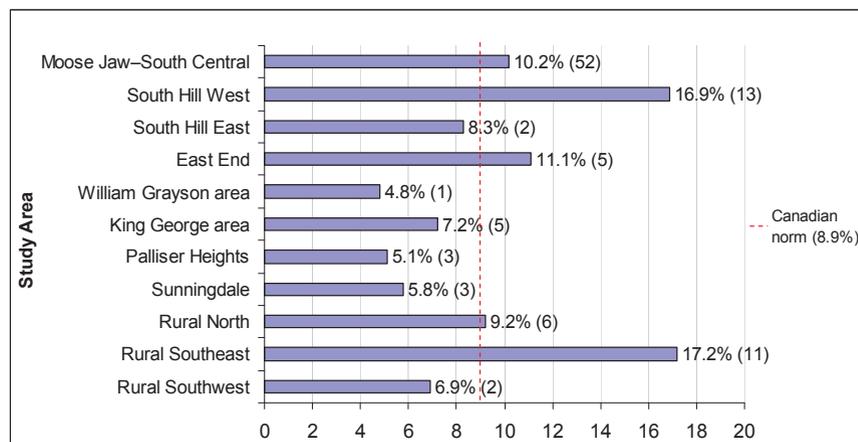
**Notes:** Yellow cells indicate at least one percentage point above the Canadian norm; green cells indicate half or less of the norm. Results should be read with caution when percentages are based on fewer than 5 children.

As Table 3.1 shows, while there was great variation between study areas, within the physical health and wellbeing domain, kindergarten students in Moose Jaw-South Central were generally much less likely to be considered vulnerable than the Canadian norm. The two exceptions are the study areas of East End and Rural Southeast. Looking at the proportion of children considered challenged within each sub-domain (shown in Table 3.1 and Figures 3.2, 3.3, and 3.4), only a few study areas had a higher percentage than the norm: East End in the case of physical readiness; South Hill East and Rural Southeast for physical independence; and in gross and fine motor skills, Sunningdale and Rural Southeast. Especially in the sub-domain of gross and fine motor skills, the study areas showed a wide range, from 4.2% of children considered challenged in South Hill East to almost 12 times as many, 48.1%, in Sunningdale.



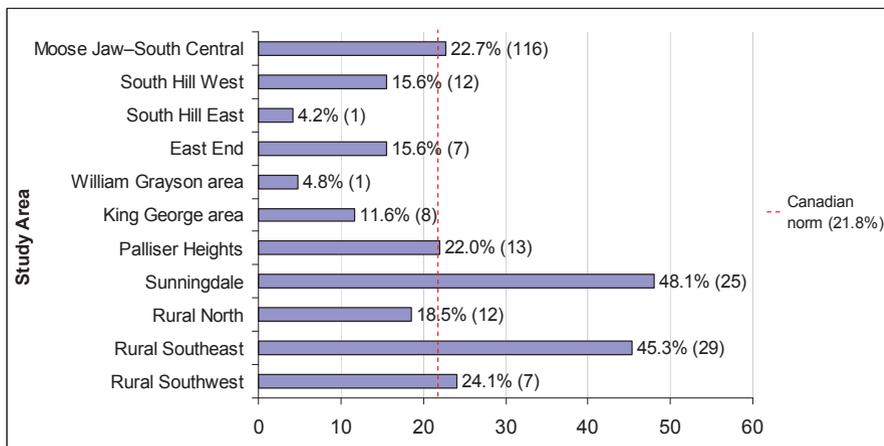
**Figure 3.2. Percentage (number) of children considered challenged in terms of physical readiness for school**

**Note:** This sub-domain assesses whether the child has arrived more than once over- or underdressed for school-related activities; too tired/sick to do school work; late; or hungry.



**Figure 3.3. Percentage (number) of children considered challenged in terms of physical independence**

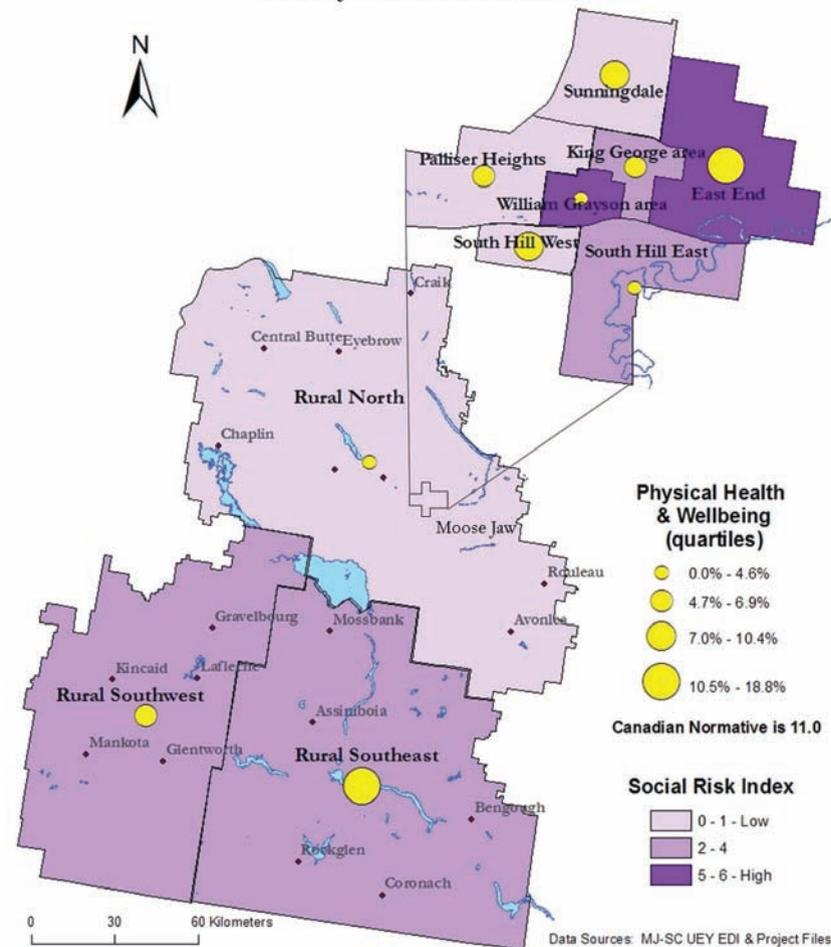
Note: This sub-domain assesses whether the child is independent in washroom habits most of the time; shows an established hand preference; is well coordinated; and sucks a thumb/finger.



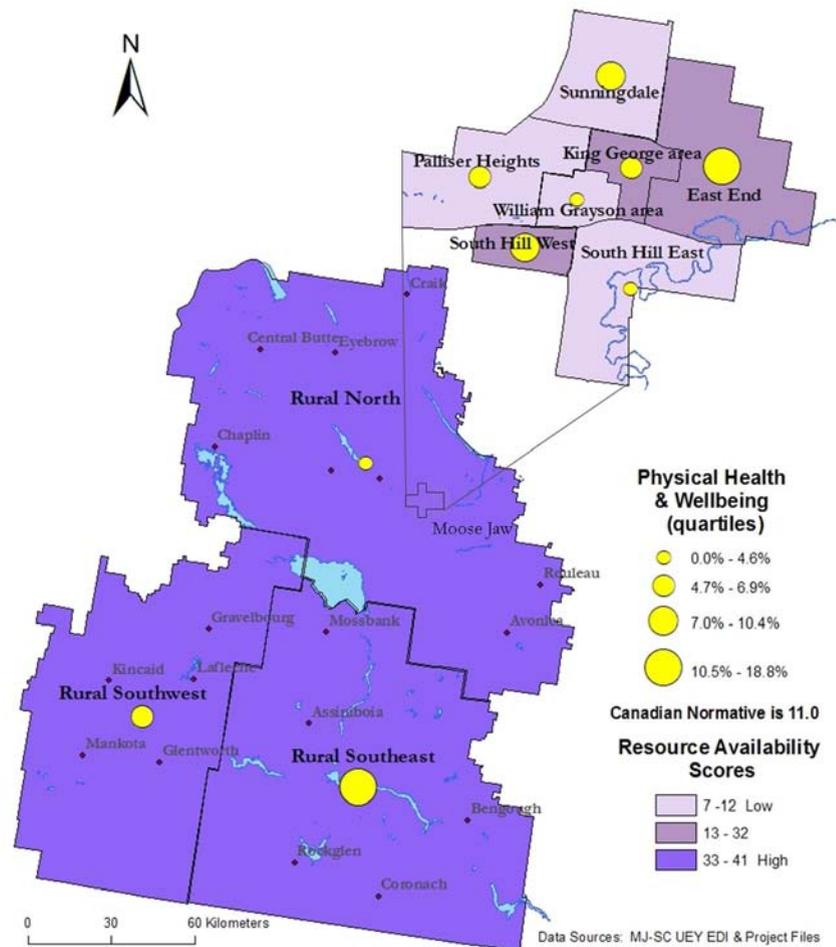
**Figure 3.4. Percentage (number) of children considered challenged in terms of gross and fine motor skills**

Note: This sub-domain assesses the child's proficiency at holding a pen, crayons, or brush; ability to manipulate objects; ability to climb stairs; and overall physical development.

**Map 3.3 EDI Domain Physical Health & Wellbeing - Percentage of Children Vulnerable & Social Risk Index Scores - Moose Jaw - South Central UEY**



Map 3.4 EDI Domain Physical Health & Wellbeing -  
Percentage of Children Vulnerable & Resource Availability Scores -  
Moose Jaw - South Central UEY



Maps 3.3 and 3.4 show the percentage of children considered vulnerable in the physical health and wellbeing domain, along with the social risk and resource availability score by study area, respectively. Based on these maps, it appears that high social risk scores and low resource availability scores are not related to poor school readiness within the physical health and wellbeing domain.

Children from areas with low resource availability fared quite well in this domain. For instance, the five study areas with the lowest RA scores all had below normal percentages of vulnerable children. On the other hand, the Rural Southeast had both the highest RA score and the greatest percentage of vulnerable children of any study area.

### 3.2.2 SOCIAL COMPETENCE

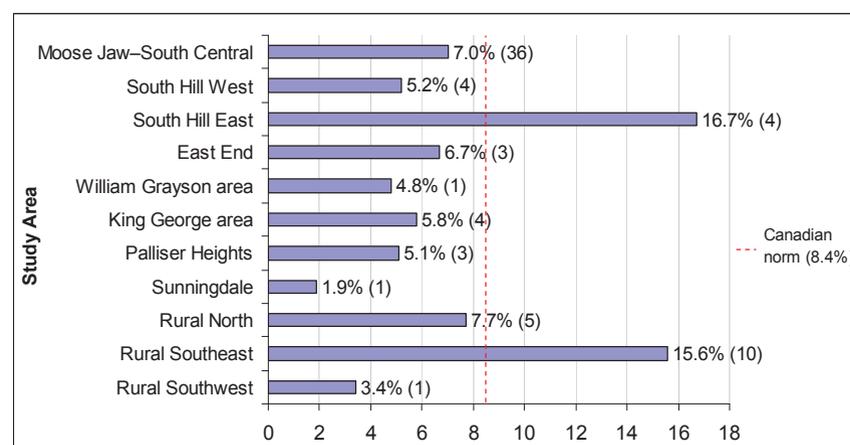
The social competence domain encompasses overall social competence, responsibility and respect, approaches to learning and readiness to explore new things. Children scoring in the lower range in this domain can generally be characterized as having poor overall social skills, with regular serious problems in more than one area of getting along with other children, accepting responsibility for own actions, following rules and class routines, respect for adults, children and other property, with self-confidence, self-control, adjustment to change, usually unable to work independently. Those scoring in the higher range generally get along with other children, working and playing with them cooperatively; are respectful, self-confident, curious and able to follow class routines and work independently.

As Table 3.2 shows, children within the Moose Jaw-South Central region did extremely well in the social competence domain, with the overall percentage of children considered vulnerable half that of the Canadian norm (4.1% versus 9.6%) and all study areas below the norm. The only areas of concern were in the sub-domain of ‘overall social competence’ in South Hill East and the Rural Southeast area (see Table 3.2 and Figures 3.5-3.8). With the exception of this sub-domain, there was relatively little variation across study areas.

Study area	Social competence sub-domains				
	Social competence	Overall social competence	Responsibility & respect	Approaches to learning	Explores new things
Canadian sample	9.6%	8.4%	4.7%	8.1%	3.2%
Moose Jaw–South Central	4.1% (21)	7.0% (36)	2.7% (14)	4.1% (21)	1.4% (7)
South Hill West	7.8% (6)	5.2% (4)	5.2% (4)	7.8% (6)	2.6% (2)
South Hill East	4.2% (1)	16.7% (4)	4.2% (1)	0% (0)	0% (0)
East End	2.2% (1)	6.7% (3)	2.2% (1)	2.2% (1)	4.4% (2)
William Grayson area	4.8% (1)	4.8% (1)	4.8% (1)	4.8% (1)	0% (0)
King George area	0% (0)	5.8% (4)	0% (0)	1.4% (1)	0% (0)
Palliser Heights	1.7% (1)	5.1% (3)	3.4% (2)	5.1% (3)	0% (0)
Sunningdale	1.9% (1)	1.9% (1)	0% (0)	1.9% (1)	0% (0)
Rural North	4.6% (3)	7.7% (5)	1.5% (1)	6.2% (4)	1.5% (1)
Rural Southeast	9.4% (6)	15.6% (10)	6.3% (4)	4.7% (3)	1.6% (1)
Rural Southwest	3.4% (1)	3.4% (1)	0% (0)	3.4% (1)	3.4% (1)

**Table 3.2. Percentage (number) of children considered vulnerable in social competence domain and challenged in sub-domains.**

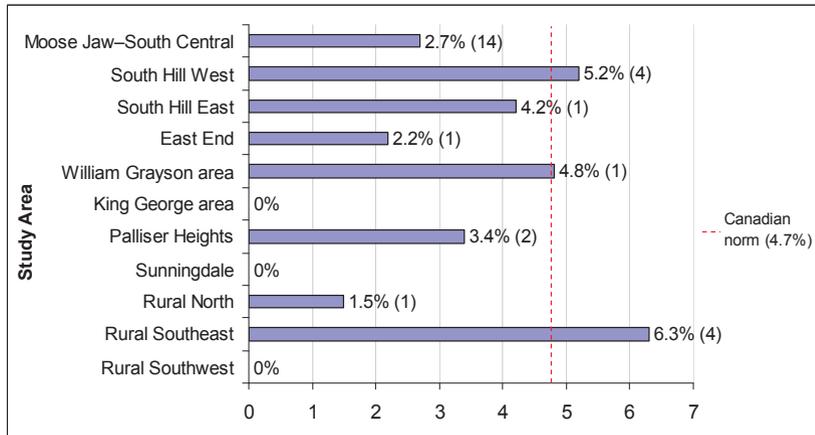
Notes: Yellow cells indicate at least one percentage point above the Canadian norm; green cells indicate half or less of the norm. Results should be read with caution when percentages are based on fewer than 5 children.



**Figure 3.5. Percentage (number) of children considered challenged in terms of overall social competence**

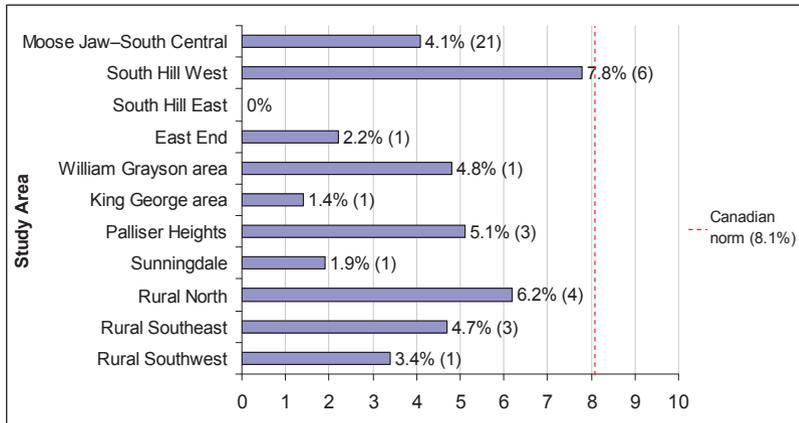
Note: This sub-domain assesses the child’s overall social/emotional development and ability to get along with peers, and whether the child plays and works cooperatively with other children at the level appropriate for his/her age; is able to play with various children; and shows self-confidence.

Maps 3.5 and 3.6 show the percentage of children considered vulnerable in the social competence domain, along with the social risk and resource availability score, respectively, by study area. These maps reveal no apparent relationship between social risk or resource availability scores and school readiness within the social competence domain. The four study areas with the highest SRI scores—South Hill East, King George, East End, and William Grayson—all had low percentages of children considered vulnerable (half or less of the norm).



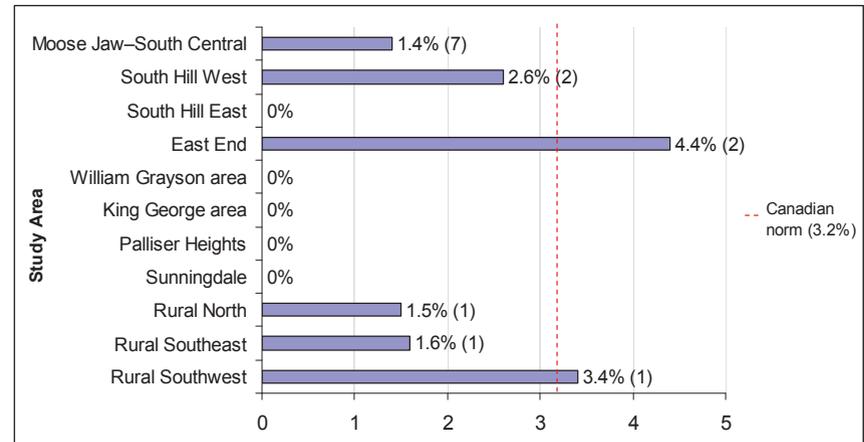
**Figure 3.6. Percentage (number) of children considered challenged in terms of responsibility and respect**

Note: This sub-domain assesses whether the child respects the property of others; follows rules and instructions; demonstrates self-control; demonstrates respect for adults; demonstrates respect for other children; accepts responsibility for actions; takes care of school materials; and shows tolerance to



**Figure 3.7. Percentage (number) of children considered challenged in terms of approaches to learning**

Note: This sub-domain assesses whether the child listens attentively; follows directions; completes work on time; works independently; works neatly and carefully; is able to solve day-to-day problems by him/herself; is able to follow one-step instructions; is able to follow class routines without reminders; and is able to adjust to changes in routines.

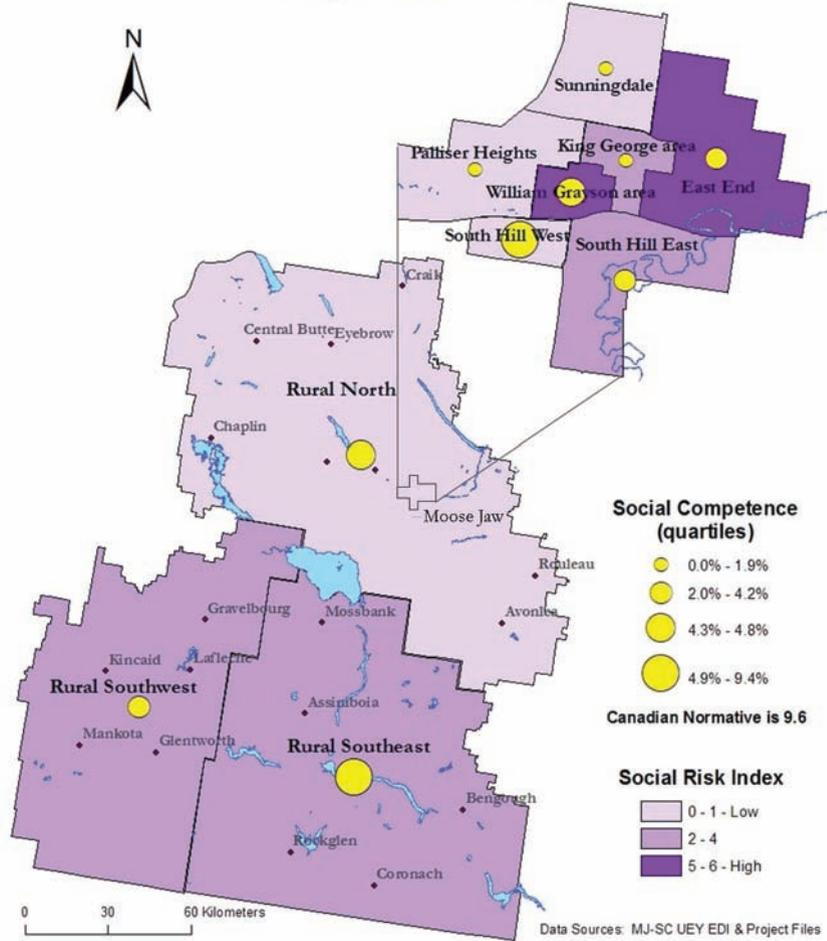


**Figure 3.8. Percentage (number) of children considered challenged in terms of readiness to explore new things**

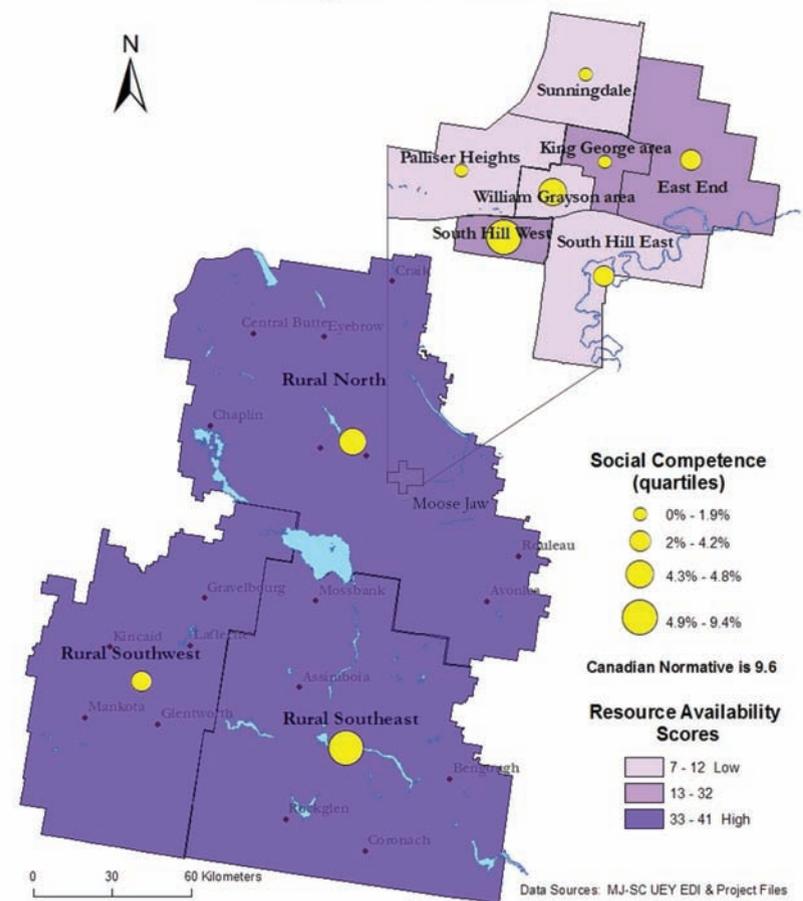
Note: This sub-domain assesses whether the child is curious about the world; is eager to play with a new toy or game; and is eager to play with/read a new book.



Map 3.5 EDI Domain Social Competence - Percentage of Children Vulnerable & Social Risk Index Scores - Moose Jaw - South Central UEY



Map 3.6 EDI Domain Social Competence - Percentage of Children Vulnerable & Resource Availability Scores - Moose Jaw - South Central UEY



### 3.2.3 EMOTIONAL MATURITY

This domain includes both positive (prosocial/helping) behaviour, and three areas of negative behaviour: anxiety and fear, aggression, and hyperactivity and inattention. Children scoring in the lower range on this domain can generally be characterized as having regular problems managing aggressive behaviour, being prone to disobedience and/or easily distractible, inattentive, impulsive, and usually unable to show helping behaviour towards other children; they may appear nervous or shy and cry or be upset when left by a caregiver. On the other hand, children scoring at the higher end almost never show aggressive, anxious or impulsive behaviour; they are able to pay attention and sit still and are helpful and thoughtful.

Overall, children from the Moose Jaw-South Central region fared well in the emotional maturity domain, with the percentage of children considered vulnerable below the Canadian norm in most study areas (Table 3.3). South Hill East had the highest percentage of vulnerable children (12.5%), followed by Palliser Heights (11.9%) and East End (11.1%).

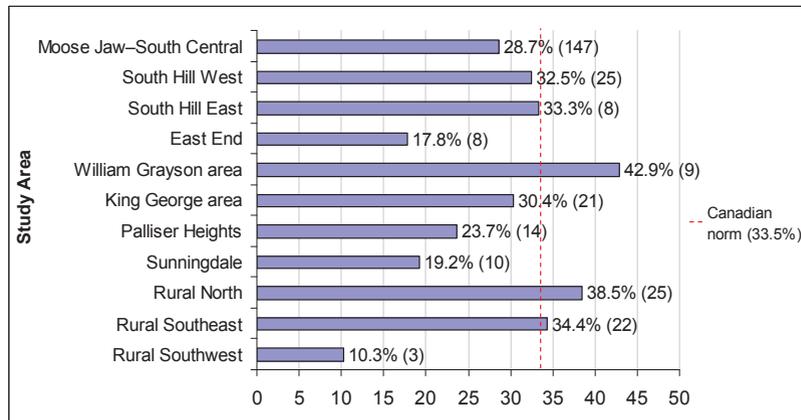
Looking at the sub-domains (Table 3.3 and Figures 3.9-3.12), the Rural North and, in particular, the William Grayson area had a considerably higher percentage of children who were challenged in prosocial and helping behaviour compared to the Canadian norm. The King George area, Palliser Heights and the Rural Southeast had more children who were considered challenged in the sub-domain of aggressive behaviour—in the case of Rural Southeast, twice as many as the norm. In the sub-domain of hyperactivity, the South Hill East neighbourhood had a slightly higher than normal proportion of children who were challenged.

Study area	Emotional maturity	Sub-domains			
		Prosocial & helping behaviour	Anxious & fearful behaviour	Aggressive behaviour	Hyperactivity & inattention
Canadian sample	10.0%	33.5%	2.1%	7.8%	13.1%
Moose Jaw–South Central	8.4% (43)	28.7% (147)	1.4% (7)	7.6% (39)	10.7% (55)
South Hill West	7.8% (6)	32.5% (25)	1.3% (1)	2.6% (2)	13.0% (10)
South Hill East	12.5% (3)	33.3% (8)	0% (0)	8.3% (2)	16.7% (4)
East End	11.1% (5)	17.8% (8)	2.2% (1)	4.4% (2)	11.1% (5)
William Grayson area	9.5% (2)	42.9% (9)	0% (0)	4.8% (1)	4.8% (1)
King George area	8.7% (6)	30.4% (21)	1.4% (1)	13.0% (9)	13.0% (9)
Palliser Heights	11.9% (7)	23.7% (14)	1.7% (1)	13.6% (8)	13.6% (8)
Sunningdale	5.8% (3)	19.2% (10)	0% (0)	5.8% (3)	5.8% (3)
Rural North	6.2% (4)	38.5% (25)	3.1% (2)	3.1% (2)	10.8% (7)
Rural Southeast	9.4% (6)	34.4% (22)	1.6% (1)	15.6% (10)	9.4% (6)
Rural Southwest	3.4% (1)	10.3% (3)	0% (0)	0% (0)	6.9% (2)

**Table 3.3. Percentage (number) of children considered vulnerable in emotional maturity domain and challenged in sub-domains.**

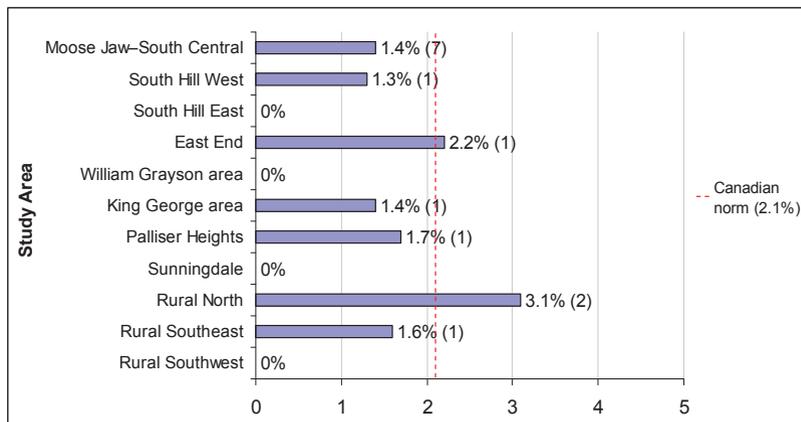
Note: Yellow cells indicate at least one percentage point above the Canadian norm; green cells indicate half or less of the norm. Results should be read with caution when percentages are based on fewer than 5 children.

Looking at Maps 3.7 and 3.8, there does not appear to be a consistent association between vulnerability and social risk scores in this domain. For instance, while East End had both a high social risk score and high percentage of children considered vulnerable, Palliser Heights had the lowest social risk and also one of the highest proportions of vulnerable children. Similarly, availability of programs and services does not correspond to fewer vulnerable children; the William Grayson area, with the lowest RA score, had about the same proportion of children considered vulnerable as the Rural Southeast, which has the highest RA score.



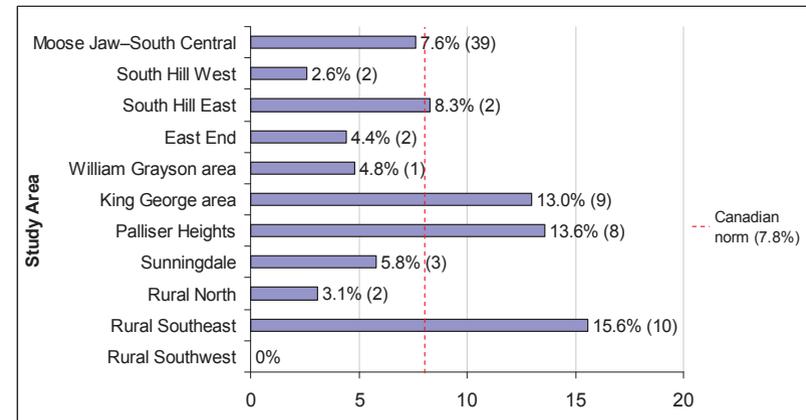
**Figure 3.9. Percentage (number) of children considered challenged in terms of prosocial and helping behaviour**

**Note:** This sub-domain assesses whether the child will try to help someone who has been hurt; volunteers to help clear up a mess someone else has made; if there is a quarrel or dispute will try to stop it; offers to help other children who have difficulty with a task; comforts a child who is crying or upset; spontaneously helps to pick up objects which another child has dropped; will invite bystanders to join in a game; and helps other children who are feeling sick.



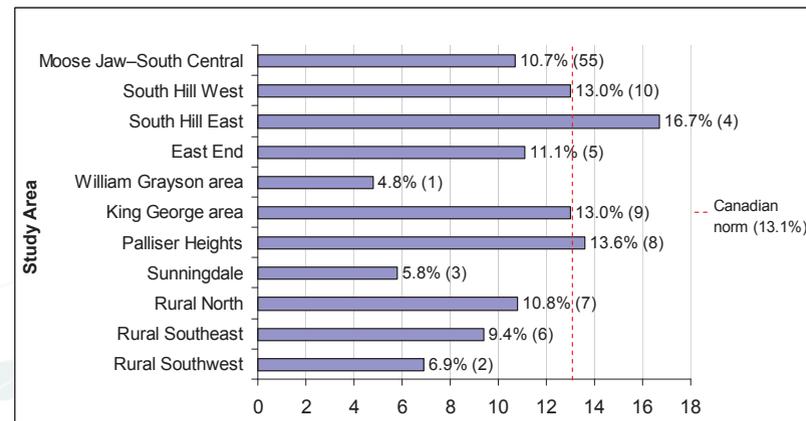
**Figure 3.10. Percentage (number) of children considered challenged in terms of anxious and fearful behaviour**

**Note:** This sub-domain assesses whether the child is upset when left by parent/guardian; seems to be unhappy, sad, or depressed; appears fearful or anxious; appears worried; cries a lot; is nervous, high-strung, or tense; is incapable of making decisions; and is shy.



**Figure 3.11. Percentage (number) of children considered challenged in terms of aggressive behaviour**

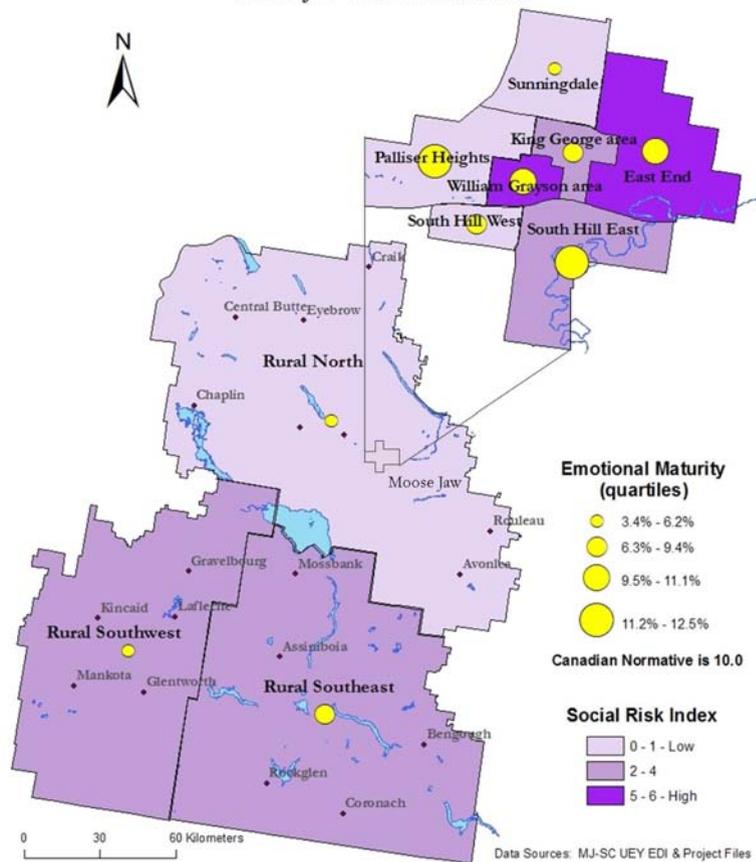
**Note:** This sub-domain assesses whether the child gets into physical fights; bullies or is mean to others; kicks, bites, hits other children or adults; takes things that do not belong to him/her; laughs at other children's discomfort; is disobedient; and has temper tantrums.



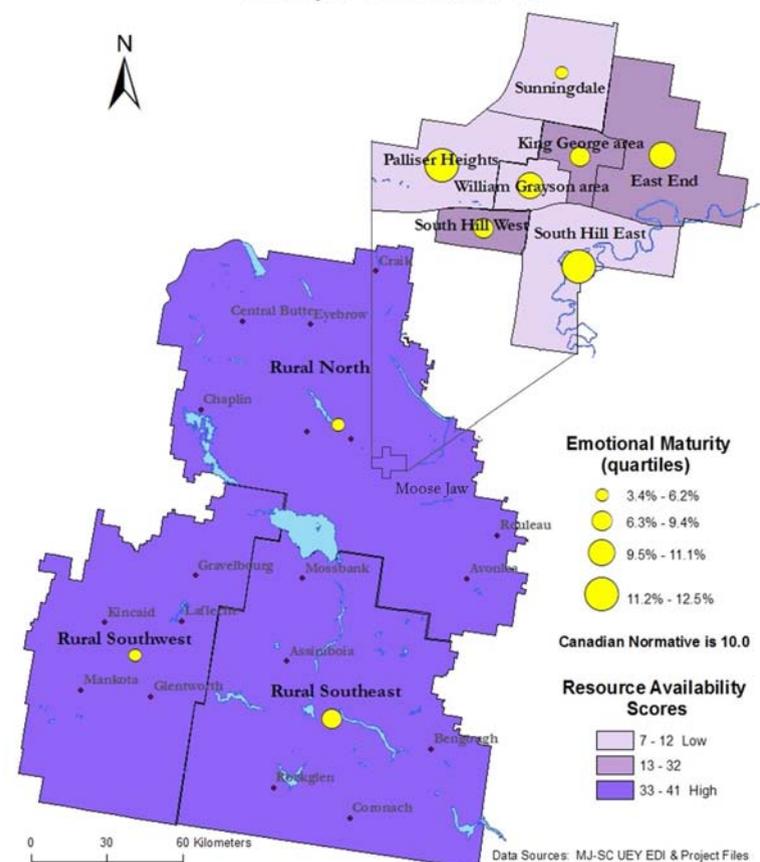
**Figure 3.12. Percentage (number) of children considered challenged in terms of hyperactivity and inattention**

**Note:** This sub-domain assesses whether the child is unable to sit still; is distractible and has trouble sticking to any activity; fidgets; is impulsive, acts without thinking; has difficulty awaiting turn in games or groups; cannot settle to anything for more than a few moments; and is inattentive.

Map 3.7 EDI Domain Emotional Maturity - Percentage of Children Vulnerable & Social Risk Index Scores - Moose Jaw - South Central UEY



Map 3.8 EDI Domain Emotional Maturity - Percentage of Children Vulnerable & Resource Availability Scores - Moose Jaw - South Central UEY



### 3.2.4 LANGUAGE AND COGNITIVE DEVELOPMENT

This domain covers basic language and number skills, as well as interest in numbers and words and more advanced reading and writing skills. Children scoring in the lower range on this domain can generally be characterized as having problems in both reading/writing and numeracy, unable to read and write simple words; uninterested in trying, and often unable to attach sounds to letters, having difficulty remembering things, counting to 20, recognizing and comparing numbers, and usually not interested in numbers. Children scoring in the higher range on this domain can generally be characterized as being interested in books, reading and writing, and rudimentary math, capable of reading and writing simple sentences and complex words, and able to count and recognize numbers and geometric shapes.

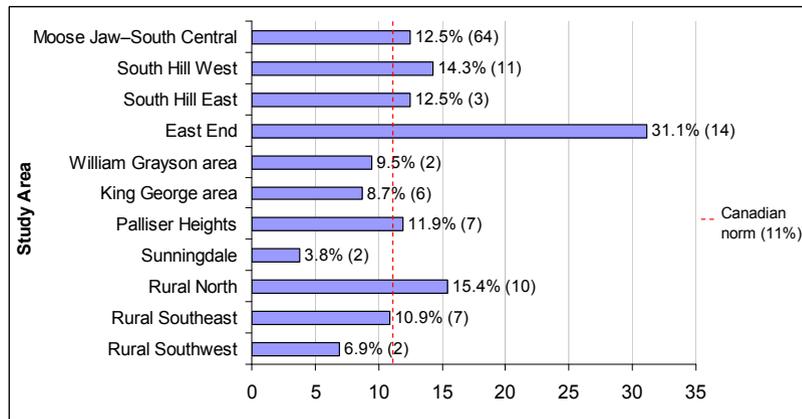
South Hill East and East End are the only study areas that had a higher percentage of vulnerable children than the norm (Table 3.4). Within sub-domains, South Hill East, South Hill West, Rural North, and, in particular, East End had greater proportions of children scoring low on basic literacy skills, while in the case of basic numeracy, South Hill East, King George, Rural North and East End had higher than normal percentages. The proportion of children considered challenged for the other two sub-domains, interest in literacy/numeracy and advanced literacy, were below the norm in all study areas (Table 3.4 and Figures 3.13-3.16). It is somewhat surprising that in five study areas, fewer children were challenged in the sub-domain of advanced literacy than basic literacy, since the skills included in basic literacy are generally seen as prerequisites for those falling under 'advanced' literacy.

Study area	Language & cognitive development	Sub-domains			
		Basic literacy	Interest in literacy/numeracy	Advanced literacy	Basic numeracy
Canadian sample	9.6%	11.0%	15.8%	19.4%	14.2%
Moose Jaw–South Central	7.6% (39)	12.5% (64)	9.2% (47)	8.8% (45)	14.3% (73)
South Hill West	10.4% (8)	14.3% (11)	15.6% (12)	14.3% (11)	14.3% (11)
South Hill East	12.5% (3)	12.5% (3)	8.3% (2)	12.5% (3)	20.8% (5)
East End	17.8% (8)	31.1% (14)	13.3% (6)	15.6% (7)	26.7% (12)
William Grayson area	4.8% (1)	9.5% (2)	9.5% (2)	9.5% (2)	14.3% (3)
King George area	5.8% (4)	8.7% (6)	11.6% (8)	7.2% (5)	15.9% (11)
Palliser Heights	5.1% (3)	11.9% (7)	3.4% (2)	5.1% (3)	8.5% (5)
Sunningdale	3.8% (2)	3.8% (2)	5.8% (3)	5.8% (3)	5.8% (3)
Rural North	9.2% (6)	15.4% (10)	9.2% (6)	12.3% (8)	23.1% (15)
Rural Southeast	3.1% (2)	10.9% (7)	6.3% (4)	1.6% (1)	9.4% (6)
Rural Southwest	6.9% (2)	6.9% (2)	6.9% (2)	6.9% (2)	6.9% (2)

**Table 3.4. Percentage (number) of children considered vulnerable in language and cognitive development domain and challenged in sub-domains.**

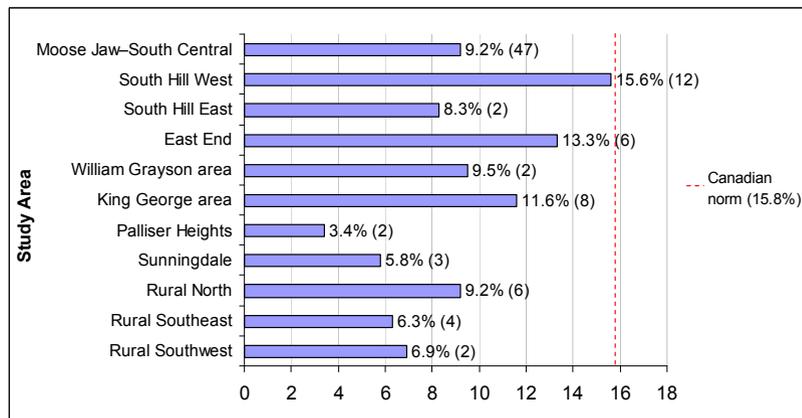
**Note:** Yellow cells indicate at least one percentage point above the Canadian norm; green cells indicate half or less of the norm. Results should be read with caution when percentages are based on fewer than 5 children.

Maps 3.9 and 3.10 compare the study areas in terms of the percentages of children considered vulnerable in this domain and the SRI and RA scores, respectively. No pattern is apparent in either case. The William Grayson area again showed unexpected results, with a very low percentage of children considered vulnerable, in spite of high social risk.



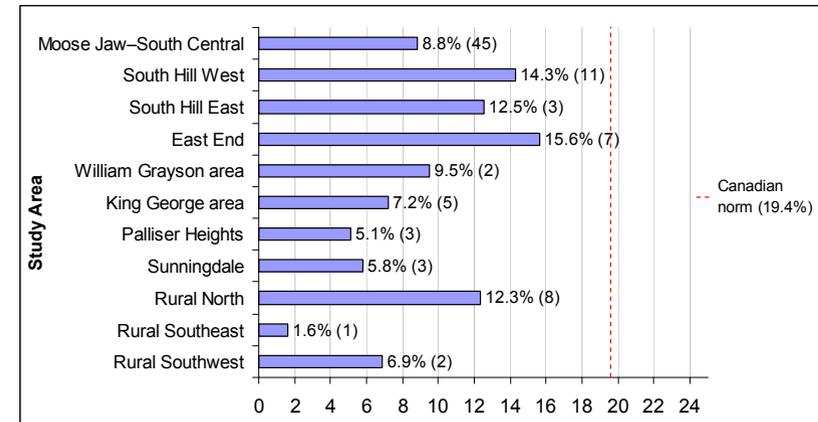
**Figure 3.13. Percentage (number) of children considered challenged in terms of basic literacy**

**Note:** This sub-domain assesses whether the child knows how to handle a book; is able to identify at least 10 letters of the alphabet; is able to attach sounds to letters; shows awareness of rhyming words; is able to participate in group reading activities; is experimenting with writing tools; is aware of writing directions in English (left to right, top to bottom); and is able to write his/her own name.



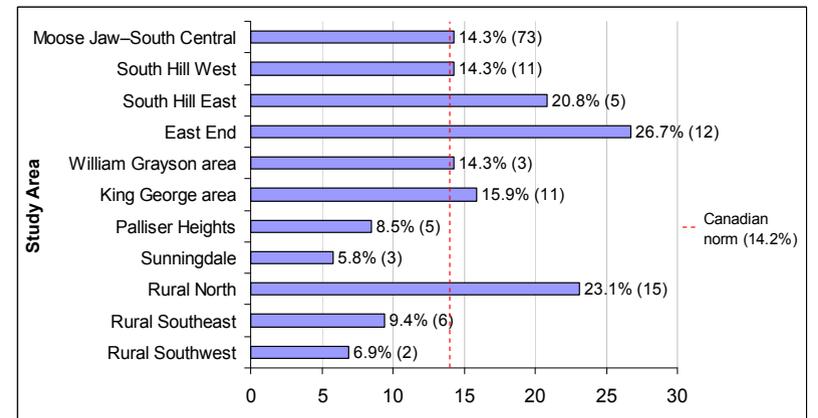
**Figure 3.14 Percentage (number) of children considered challenged in terms of interest in literacy/numeracy**

**Note:** This sub-domain assesses whether the child is generally interested in books; is interested in reading; is able to remember things easily; is interested in mathematics; and is interested in games involving numbers.



**Figure 3.15 Percentage (number) of children considered challenged in terms of advanced literacy**

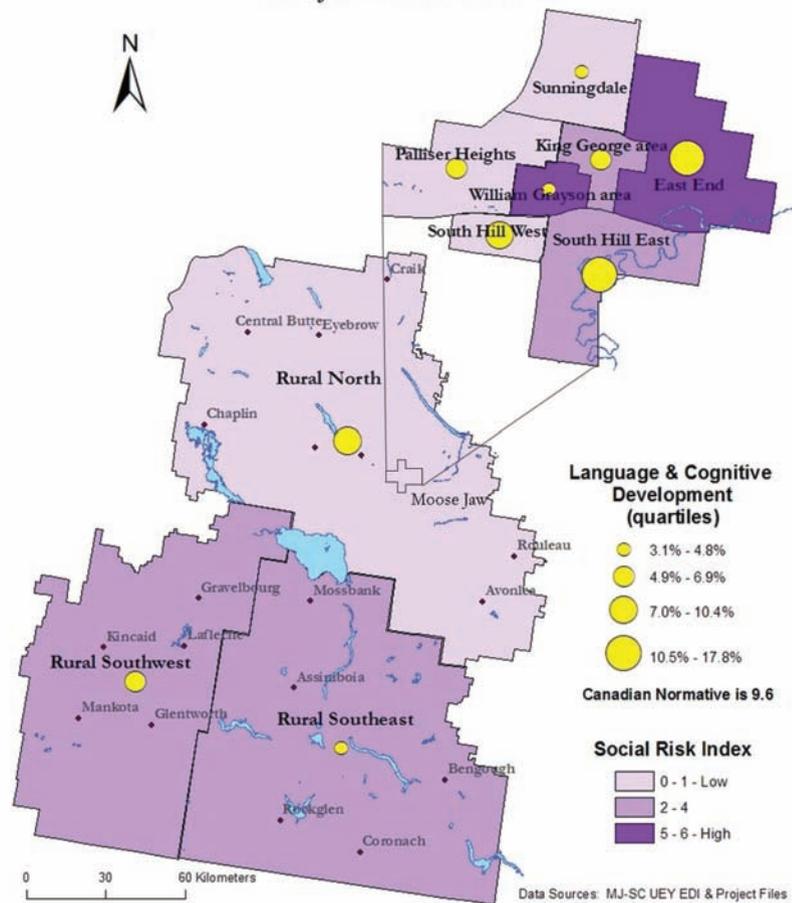
**Note:** This sub-domain assesses whether the child is able to read simple words; is able to read complex words; is able to read simple sentences; is able to write simple words; is able to write simple sentences; and is interested in writing voluntarily.



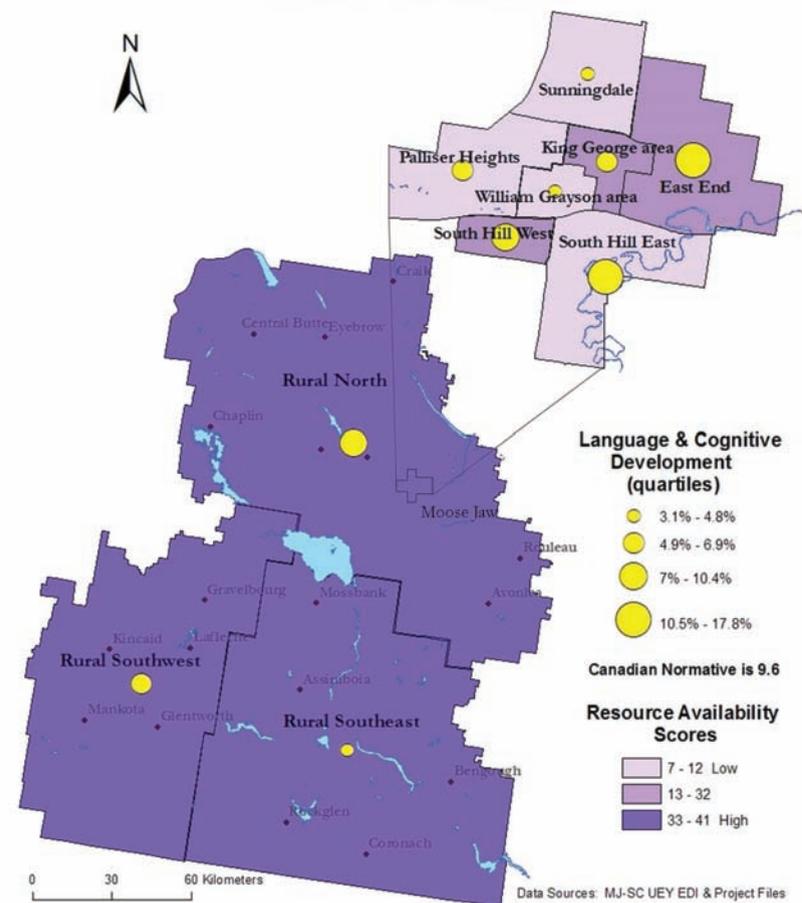
**Figure 3.16 Percentage (number) of children considered challenged in terms of basic numeracy**

**Note:** This sub-domain assesses whether the child is able to sort and classify objects by a common characteristic; is able to use one-to-one correspondence; is able to count to 20; is able to recognize numbers 1-10; is able to say which number is bigger of the two; is able to recognize geometric shapes (e.g., triangle, circle, square); and understands simple time concepts (e.g., today, summer, bedtime).

Map 3.9 EDI Domain Language & Cognitive Development - Percentage of Children Vulnerable & Social Risk Index Scores - Moose Jaw - South Central UEY



Map 3.10 EDI Domain Language & Cognitive Development - Percentage of Children Vulnerable & Resource Availability Scores - Moose Jaw - South Central UEY



### 3.2.5 COMMUNICATIONS SKILLS AND GENERAL KNOWLEDGE

This domain refers to children’s ability to communicate needs and ideas effectively and their interest in the surrounding world. Children scoring in the lower range on this domain can generally be characterized as having poor communication skills and articulation, limited command of English or French, having difficulties in talking to others, understanding and being understood, and lacking in general knowledge. Those who score high in the domain have excellent communication skills, can tell a story and communicate with both children and adults, have no problem with articulation, and take part in imaginative play.

As Table 3.5 shows, the proportion of children considered vulnerable in this domain was at or below the norm in all the study areas, and in seven areas, less than half the norm. In terms of numbers, this represents only 28 vulnerable children across the whole region.

Maps 3.11 and 3.12 show that, as in other domains, neither social risk nor resource availability was consistently related to vulnerability. Notably, unexpected results were seen in the four study areas with the highest SRI scores—South Hill East, East End, the King George area, and the William Grayson area—all of which had low percentages of children considered vulnerable in the domain of general knowledge and communication skills. In contrast, the Rural Southeast, the area with the highest RA score, also had the highest percentage of vulnerable children.

Study area	
Canadian sample	12.2%
Moose Jaw–South Central	5.5% (28)
South Hill West	5.2% (4)
South Hill East	4.2% (1)
East End	6.7% (3)
William Grayson area	0% (0)
King George area	2.9% (2)
Palliser Heights	3.4% (2)
Sunningdale	1.9% (1)
Rural North	9.2% (6)
Rural Southeast	12.5% (8)
Rural Southwest	3.4% (1)

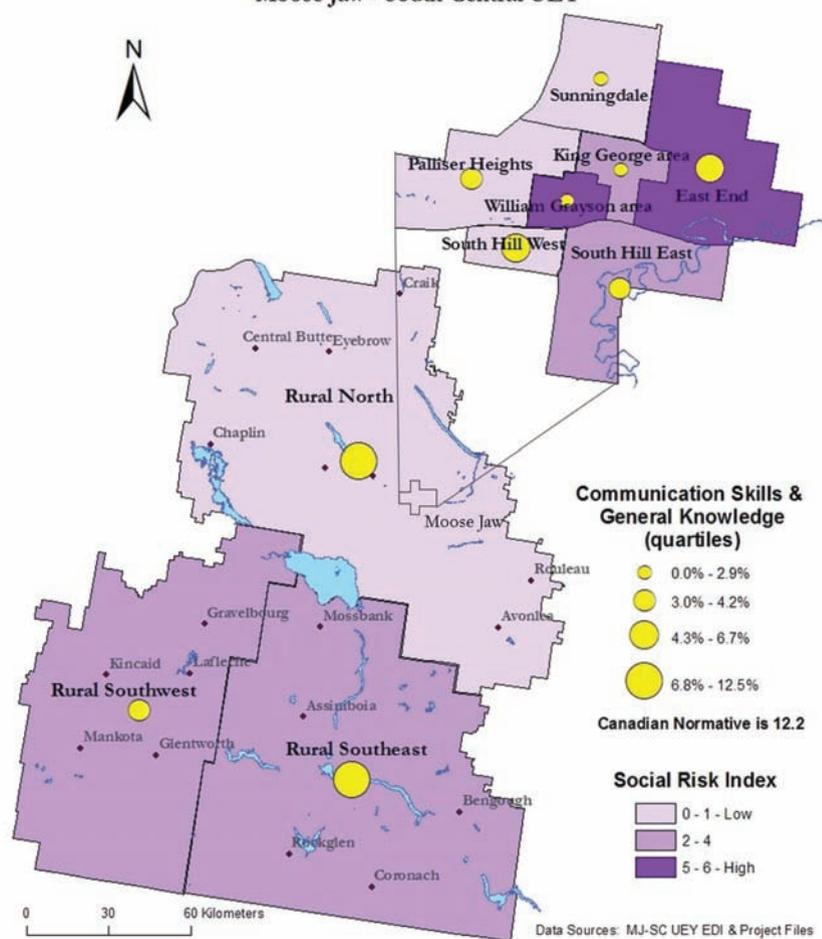
**Table 3.5. Percentage (number) of children considered vulnerable in communication skills and general knowledge domain**

**Notes:** Green cells indicate half or less of the norm. Results should be read with caution when percentages are based on fewer than 5 children. This domain has no sub-domains. It assesses the child's ability to listen; tell a story; take part in imaginative play; communicate his/her own needs in a way understandable to adults and peers; understand on first try what is being said to him/her; articulate clearly; and use language effectively; and whether the child answers questions showing knowledge about the world.

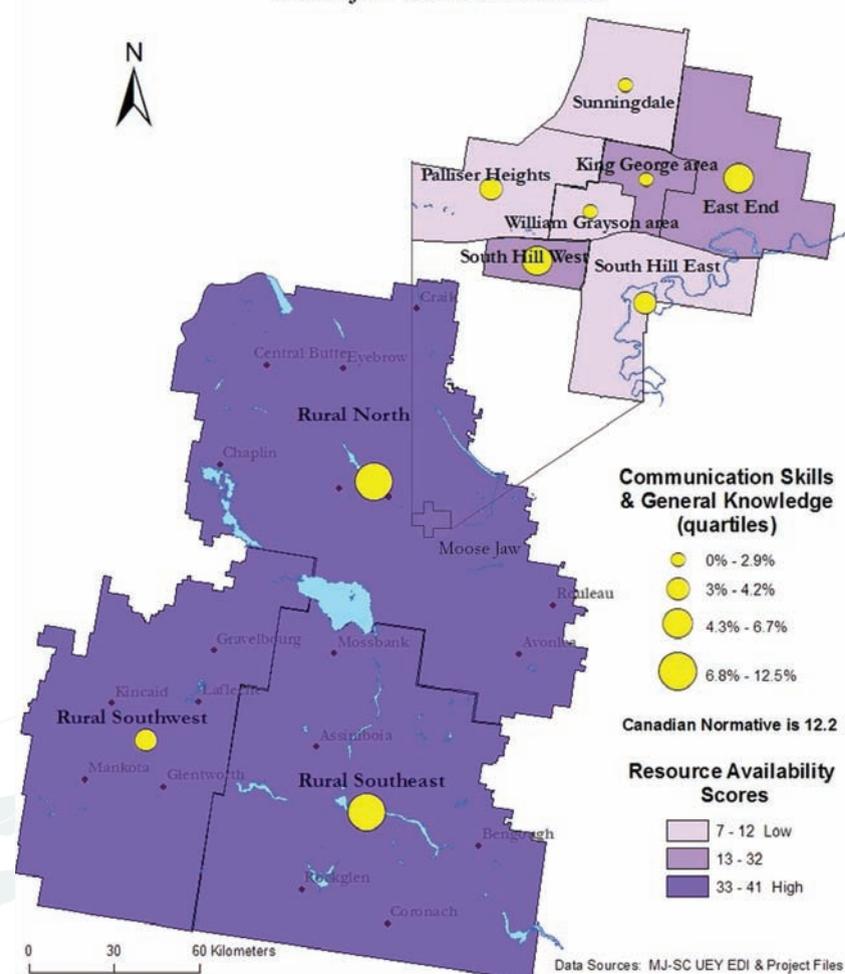
### 3.3 CHILDREN VULNERABLE IN ONE OR MORE DOMAIN

In addition to looking at each domain separately, as in the preceding sections, it is useful to consider the percentage of children who are vulnerable in at least one domain. The two measures presented here—the percent vulnerable in one or more domains, and in two or more domains—are indicators of a higher level of overall risk in a community.

Map 3.11 EDI Domain Communication Skills & General Knowledge - Percentage of Children Vulnerable & Social Risk Index Scores - Moose Jaw - South Central UEY



Map 3.12 EDI Domain Communication Skills & General Knowledge - Percentage of Children Vulnerable & Resource Availability Scores - Moose Jaw - South Central UEY



Study area	Vulnerable in 1 or more domains	Vulnerable in 2 or more domains
Canadian sample	27.2%	13.6%
Moose Jaw-South Central	21.3% (109)	7.4% (38)
South Hill West	24.7% (19)	10.4% (8)
South Hill East	25.0% (6)	8.3% (2)
East End	33.3% (15)	11.1% (5)
William Grayson area	9.5% (2)	4.8% (1)
King George area	18.8% (13)	2.9% (2)
Palliser Heights	22.0% (13)	3.4% (2)
Sunningdale	13.5% (7)	5.8% (3)
Rural North	18.5% (12)	9.2% (6)
Rural Southeast	26.6% (17)	12.5% (8)
Rural Southwest	17.2% (5)	3.4% (1)

**Table 3.6 Percentage (number) of children considered vulnerable in more than one and more than two domains**

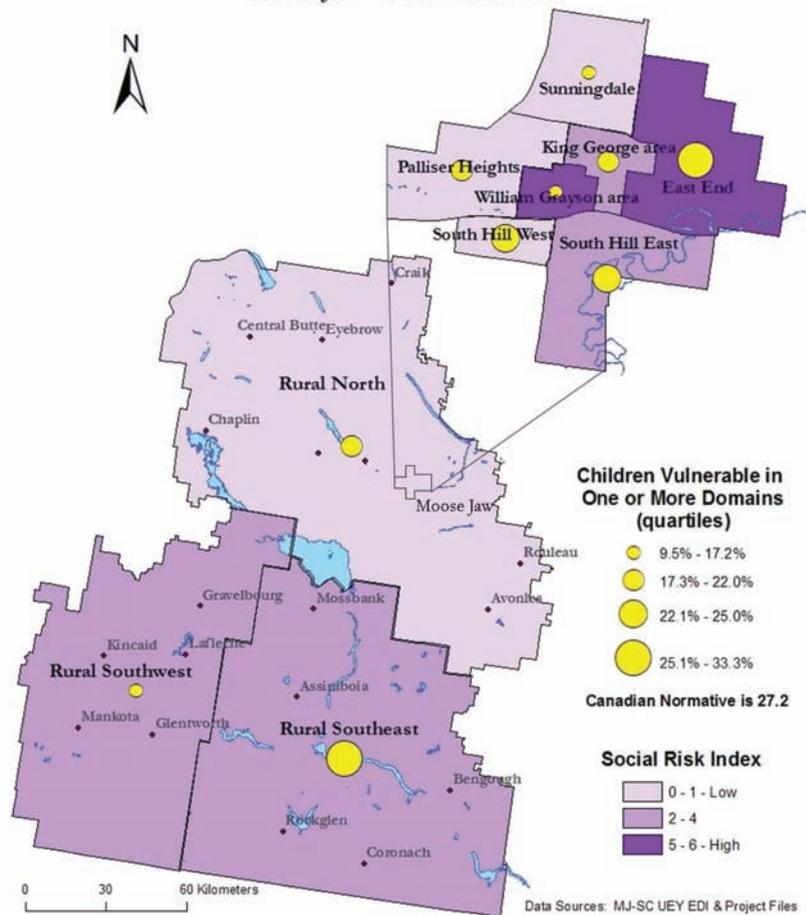
**Note:** Yellow cells indicate at least one percentage point above the Canadian norm; green cells indicate half or less of the norm. Results should be read with caution when percentages are based on fewer than 5 children.

As Table 3.6 shows, all but one study area in the region (East End) had a lower percentage of children who are considered vulnerable in one or more domains than the Canadian norm. In terms of those considered vulnerable in two or more domains, the region as a whole, and each study area within it, had a lower proportion of children in this category than the Canadian norm. In fact, in five of the ten study areas, the proportion of children considered vulnerable in two or more domains was less than half the norm.

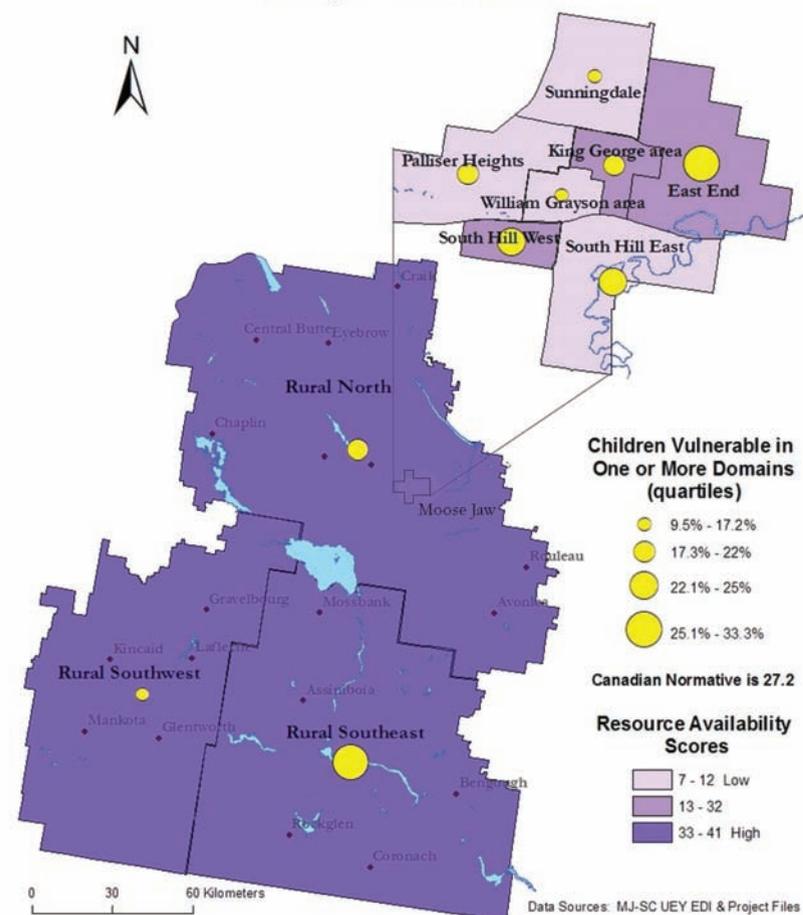
Maps 3.13 and 3.14 show the percentages of children vulnerable in one or more domains against the SRI and RA scores for each study area, respectively, while Maps 3.15 and 3.16 show the percentages of children vulnerable in two or more domains. As with the separate domains, these measures do not show any systematic relationship with either social risk or resource availability.



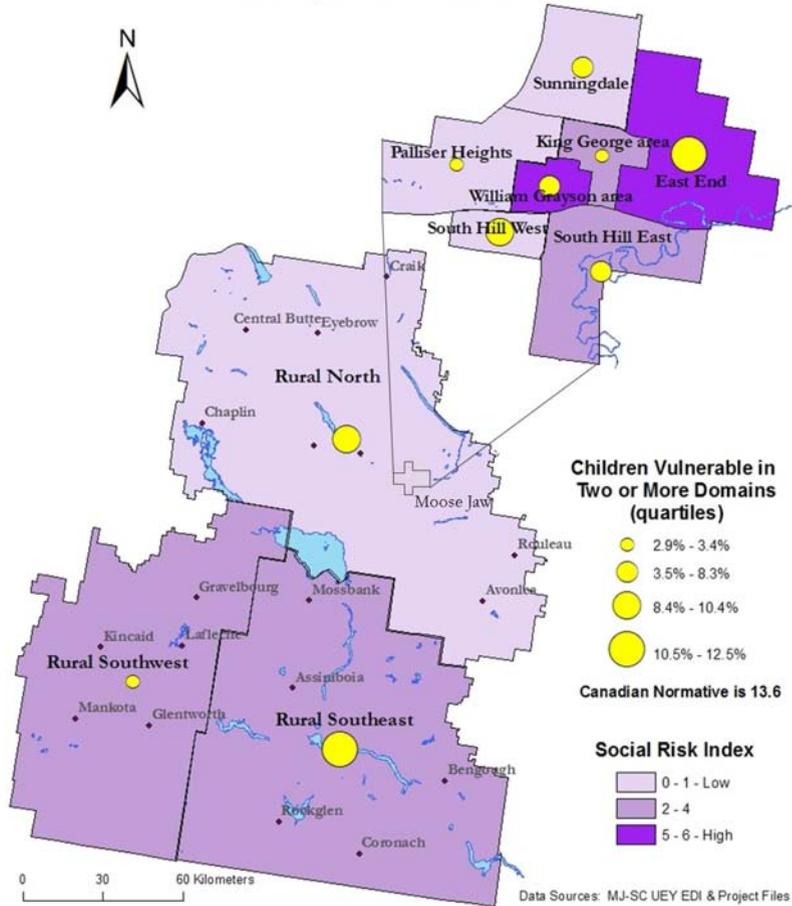
Map 3.13 Percentage of Children Vulnerable in One or More Domains & Social Risk Index Scores - Moose Jaw - South Central UEY



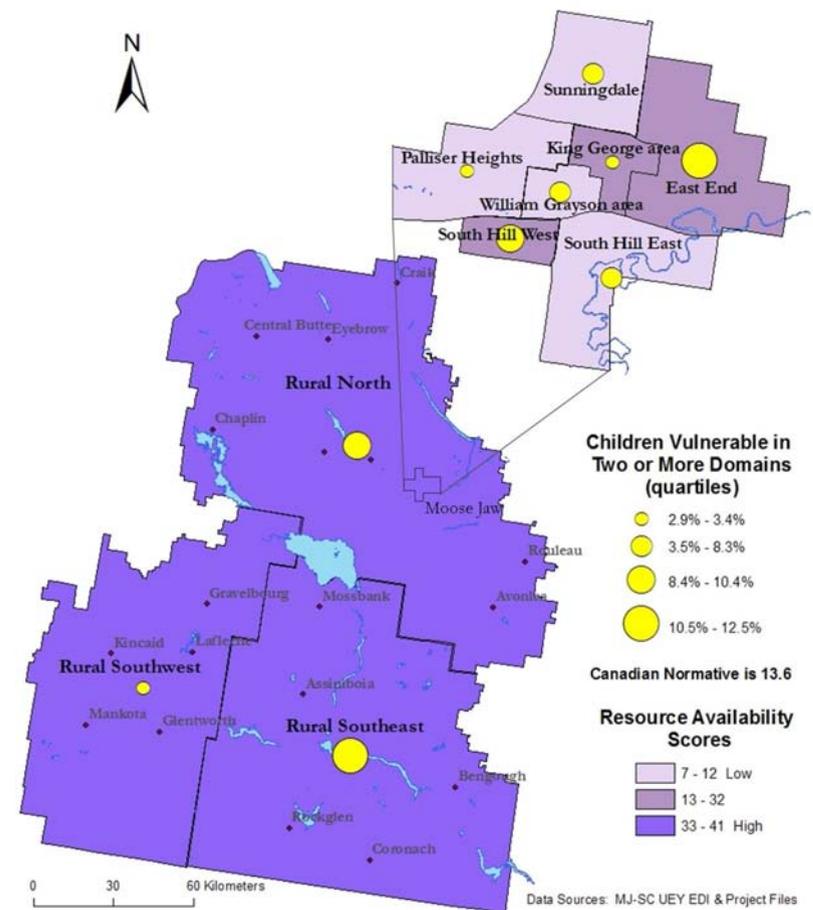
Map 3.14 Percentage of Children Vulnerable in One or More Domains & Resource Availability Scores - Moose Jaw - South Central UEY



Map 3.15 Percentage of Children Vulnerable in Two or More Domains & Social Risk Index Scores - Moose Jaw - South Central UEY



Map 3.16 Percentage of Children Vulnerable in Two or More Domains & Resource Availability Scores - Moose Jaw - South Central UEY



### 3.4 PARENT INTERVIEWS AND DIRECT ASSESSMENT OF CHILDREN

This section presents the results from PIDACS for Moose Jaw-South Central children. First, we describe the characteristics of the children and families who participated in these portions of the UEY study. Next, we show how children are doing in terms of their learning, social skills and behaviours, and physical health and wellbeing. Then we explore the family, neighbourhood and community characteristics of the region based on the parent interviews. Information will be presented both for the entire MJ-SC region and for the two sub-regions (the city of Moose Jaw and the surrounding rural areas). The standard for comparison, when appropriate, is the Canadian PIDACS sample norm.

#### 3.4.1 CHARACTERISTICS OF THE FAMILIES PARTICIPATING IN PIDACS

Table 3.7 presents key socioeconomic, familial and cultural characteristics of the families who participated in PIDACS. Overall, a majority of these families had incomes above \$30,000 a year (79.2%), a minority of mothers (6.4%) and fathers (7.3%) had not completed a secondary education, and most mothers (82.0%) and a vast majority of fathers (97.1%) had had employment within the past 12 months. A relatively low proportion of the families were headed by a lone parent (16.4%) and most families consisted of 2-5 individuals (94.4%). Very immigrant families were found within this sample; approximately 7.9% of families were of Aboriginal ancestry.

The 2006 Canadian Census data indicates that the average family

Children Assessed	Moose Jaw-South Central	Moose Jaw sub-region	Rural South Central sub-region
Total number of children	402	288	115
Parent interview completed	334	232	102
Direct assessment completed	392	280	112
<b>Family Socioeconomic Status</b>			
Family income: < \$30,000/year	20.8% (59)	21.3% (42)	19.6% (17)
Family income: > \$30,000/year	79.2% (226)	78.7% (156)	80.4% (70)
Mother did not complete Gr. 12	6.4% (21)	6.6% (15)	6.0% (6)
Father did not complete Gr. 12	7.3% (21)	6.3% (12)	9.3% (9)
Mother employed past 12 months	82.0% (265)	83.9% (188)	77.0% (77)
Father employed past 12 months	97.1% (274)	97.3% (183)	96.8% (91)
<b>Family Structure</b>			
Lone parent	16.4% (55)	19.4% (45)	9.8% (10)
Family size	2-3	54.4% (175)	55.3% (122)
	4-5	40.0% (129)	38.8% (85)
	6+	5.6% (18)	5.9% (13)
Number of siblings	None	9.4% (30)	9.7% (21)
	One	45.2% (144)	46.5% (101)
	Two	35.0% (112)	34.1% (74)
	Three	7.7% (25)	7.2% (16)
Four or more	2.7% (9)	2.5% (5)	3.2% (3)
<b>Family cultural context</b>			
Aboriginal	7.9% (26)	8.3% (19)	6.9% (7)
Immigrant	1.7% (6)	2.5% (6)	0% (0)

Table 3.7 Characteristics of families participating in PIDACS

income of the community was about \$64,000, which was considerably below the Canadian average of \$82,000. Similarly, the median income was substantially below the national median. Nearly one in five families had incomes below \$30,000 per year. However, the

unemployment rate was below the Canadian average and there was a low level of transience.

Some differences exist between sub-regions with respect to key demographic characteristics. Specifically, more rural fathers (9.3%) had not completed Grade 12 than fathers in Moose Jaw (6.3%). As well, fewer rural mothers had been employed in the past 12 months (77%) compared to non-rural mothers (83.9%). Families in Moose Jaw were more than twice as likely to be headed by a single parent compared to families in the rural sub-region (19.4% versus 9.8%). With respect to cultural backgrounds, the rural sub-region had fewer families of Aboriginal descent (6.9% versus 8.3%) and fewer immigrants (0% versus 2.5%).

### 3.4.2 DIRECT ASSESSMENT OF COGNITIVE DEVELOPMENT

Figure 3.17 depicts the percentages of children with low scores on literacy skills, number knowledge, and receptive language. Children in the MJ-SC region had higher proportions of children with low scores on early literacy skills (20.2%) than the national average (15.0%). Children in the Moose Jaw sub-region were slightly more likely to have poor literacy skills (20.8%) than the rural sub-region (18.7%). In contrast, children from both sub-regions had much lower percentages of children with low scores on number knowledge (5.1% in Moose Jaw and 8.0% in the rural sub-region) than the Canadian normative sample (15.0%). In terms of receptive language, children in the rural sub-region, where 15.5% had low scores, were very similar to the Canadian norm (15.0%), while those in Moose Jaw were slightly less likely to have low scores (13.8%).

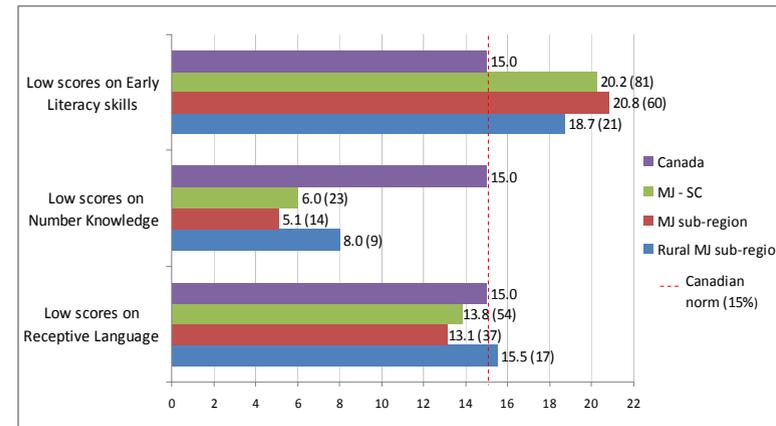


Figure 3.17 Percentage (number) of children with low scores on early literacy skills, number knowledge, and receptive language

### 3.4.3 BEHAVIOURAL OUTCOMES

Figure 3.18 indicates that the proportion of children identified as physically aggressive in the MJ-SC region was similar to the Canadian norm, with little difference between Moose Jaw and the rural sub-region. On the other hand, the proportion of children who had problems with inattention was higher in Moose Jaw (14.4%) than the rural sub-region (9.1%), and slightly higher than the Canadian norm of 13.0%. Children in MJ-SC were more likely than the Canadian average to be lacking pro-social behaviours, with the proportion having low scores on this variable higher in the rural sub-region (19.6%) than in Moose Jaw (15.6%)—both higher than the Canadian norm of 13.0%.

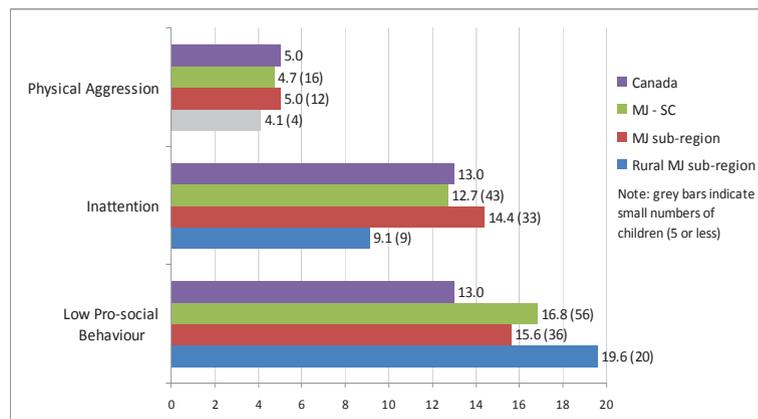


Figure 3.18 Percentage (number) of children with behavioural problems

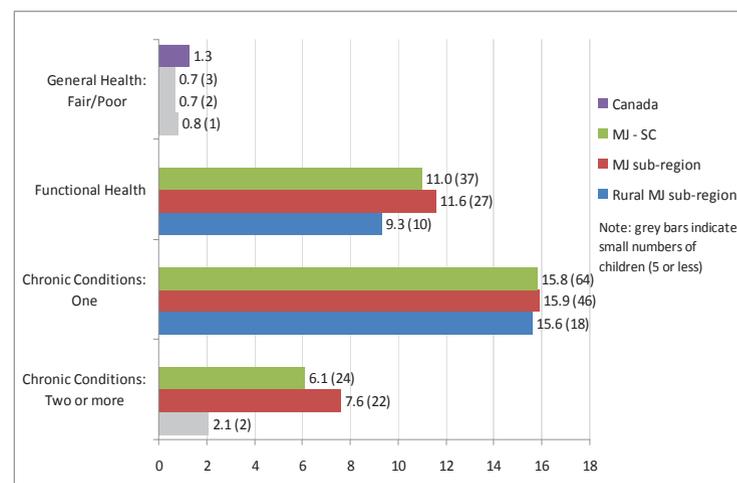


Figure 3.19 Percentage (number) of children with physical health problems

### 3.4.4 CHILDREN'S HEALTH

Figure 3.19 shows that the proportion of children with functional health problems varied between sub-regions: 11.6% in Moose Jaw compared to 9.3% in the rural sub-region. The proportion of children with one chronic condition was consistent across sub-regions (15.6% and 15.9%); however, more children from Moose Jaw had two chronic conditions (7.6%) compared to rural children (2.1%). There is no comparable Canadian data available for functional or chronic health.

Figure 3.20 illustrates the levels of anxiety and depressive symptoms experienced by children within the sub-regions. Anxiety problems were more common (7.6%) than experiences with depression (5.2%). Overall, the proportion of children who had experienced depression was slightly higher in MJ-SC (5.2%) than the Canadian average (4.0%), with urban children being somewhat more likely to have depressive symptoms (5.5%) compared to rural (4.4%). Anxiety problems in MJ-SC

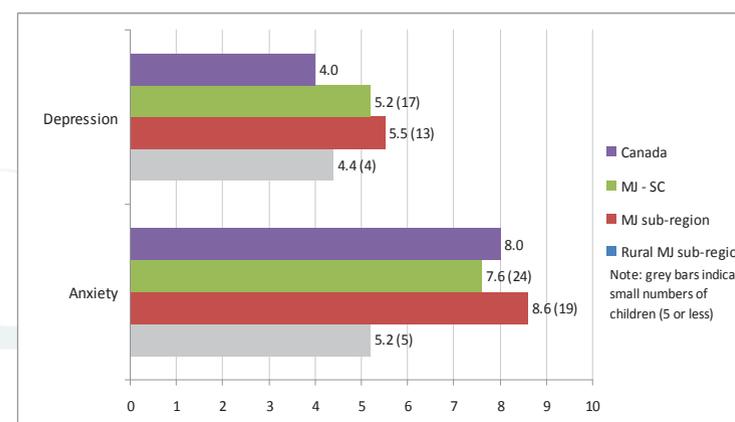


Figure 3.20 Percentage (number) of children with mental health problems

were similar to the Canadian norm (8.0%) although this also varied between sub-regions: more children from Moose Jaw experienced problems with anxiety (8.6%) than rural children (5.2%). However, it should be noted that fewer than five children from the rural sub-region were identified as experiencing anxiety and depression, therefore limiting the ability to compare across sub-regions.

### 3.4.5 FAMILY FUNCTIONING AND MATERNAL DEPRESSION

Figure 3.21 depicts the percentages of poor family functioning and maternal depression in each sub-region. The percentage of families with poor functioning was very close to the Canadian average (10.9% versus 10.0%), while the proportion of mothers with maternal depression was lower than the Canadian norm (8.5% versus 11.0%). Comparing the sub-regions, families from the Moose Jaw sub-region

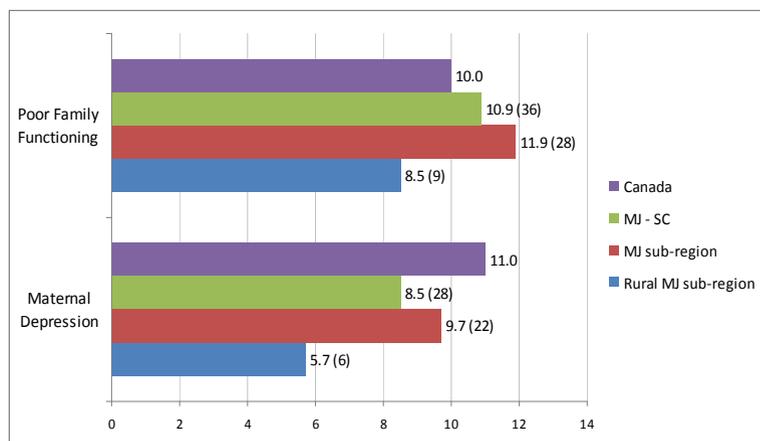


Figure 3.21 Percentage (number) of families with poor functioning and maternal depression

had higher rates of both poor family functioning (11.9% compared to 8.5%) and maternal depression (9.7% compared to 5.7%) than the rural sub-region.

### 3.4.6 PARENTING

As Figure 3.22 shows, the average scores for the three aspects of parenting—parental love and support, authority, and engagement—were very similar for the two sub-regions, and they were slightly lower than the Canadian averages.

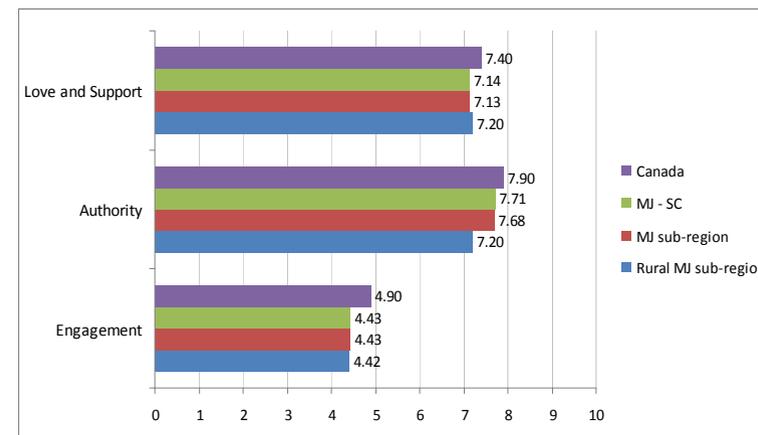


Figure 3.22 Average scores for parenting practices

Figure 3.23 shows that 47.5% of parents in the MJ-SC region use authoritative parenting styles, 26.5% use authoritarian parenting styles, 14.7% use neglectful parenting styles, and 11.2% use permissive parenting styles. Differences were found between the MJ-SC region and the Canadian norm. Parents in both Moose Jaw and the rural sub-region were substantially less likely than the Canadian

norm to use an authoritative parenting style, which is the parenting approach associated with positive developmental outcomes. Parents in the MJ-SC region were more likely than other Canadian parents to use the other parenting styles, with those in the rural sub-region especially likely to use authoritarian (28.6% versus 25.6% among the Canadian normative sample) or permissive styles (12.7% versus 10.5%) and those in Moose Jaw more likely to use a neglectful parenting style (16.2% versus 11.4%).

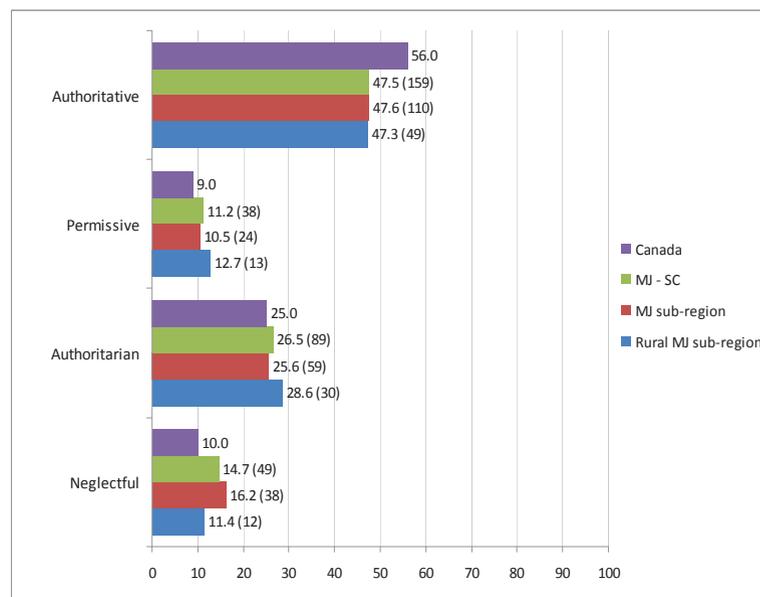


Figure 3.23 Percentages (number) of parents practicing each type of parenting style

### 3.4.7 COMMUNITY ACTIVITIES AND RESOURCES

Overall, children in engaged in literacy activities (such as looking at

books, writing or doing puzzles) more frequently than extracurricular activities (taking part in organized or unorganized physical activities, music lessons, or community programming), although it should be noted that relatively high participation was found for both types of activities (see Figures 3.24 and 3.25). Figure 3.24 shows that a majority of children engaged in extracurricular activities a few times a week (71.8%). Very few children participated in extracurricular activities only once a month or never (3.7%).

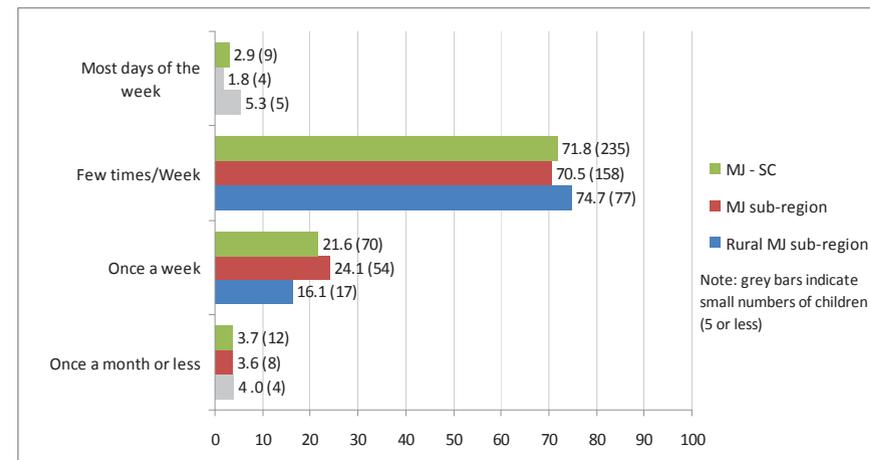


Figure 3.24 Frequency of children's participation in extracurricular activities

Figure 3.25 shows that children in the rural sub-region tended to engage in literacy activities more often than those in Moose Jaw. In the rural areas, almost three-quarters were reported to participate in literacy activities most days of the week, compared to almost two-thirds of children in Moose Jaw.

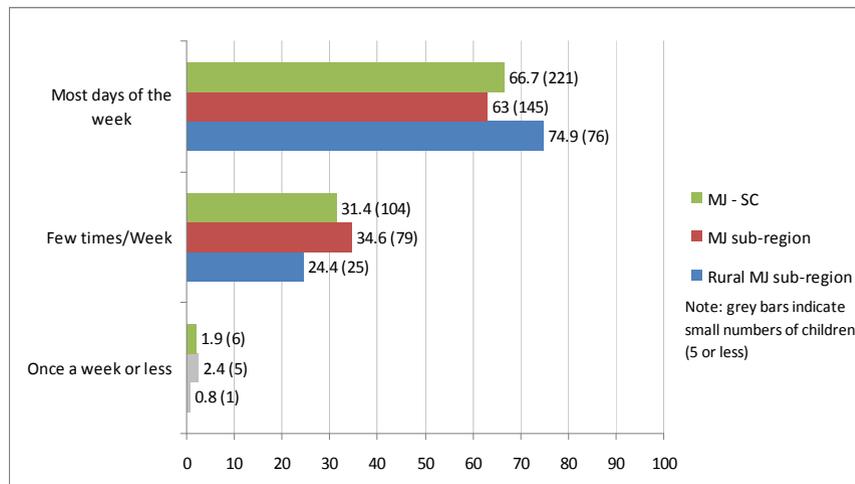


Figure 3.25 Frequency of children's engagement in literacy activities

Figures 3.26-3.28 illustrate how community resources were being used within MJ-SC sub-regions. Overall, children used recreational resources (parks, rinks, community centres, etc.) most frequently, followed by entertainment and cultural resources (sporting events, movies, museums, etc.) and, lastly, educational resources (libraries, reading programs, family resource centres, etc.).

Figure 3.26 depicts the use of recreational resources. Recreational resources were used by most children once a month (82.6%), with only a slight difference between rural and urban children (83.7% versus 82.2%, respectively). Correspondingly, compared to children in the rural sub-region, a few more children from the Moose Jaw sub-region used such resources only a few times per year (12.5% versus 9.3%) or never (4.3% versus 2.6%).

Kindergarten children in MJ-SC were actively engaged in unorganized sports 4.4 times per week, which is higher than the Canadian average of 3.8 times per week. Unorganized sports are activities that do not involve a coach or instructor; examples include running, skipping, playing at playgrounds, and swimming. The 2010 Active Healthy Kids Report Card on Physical Activity for Children and Youth identifies unstructured physical activity (ie: play) as particularly important for young children's physical health, which helps build active minds and bodies.

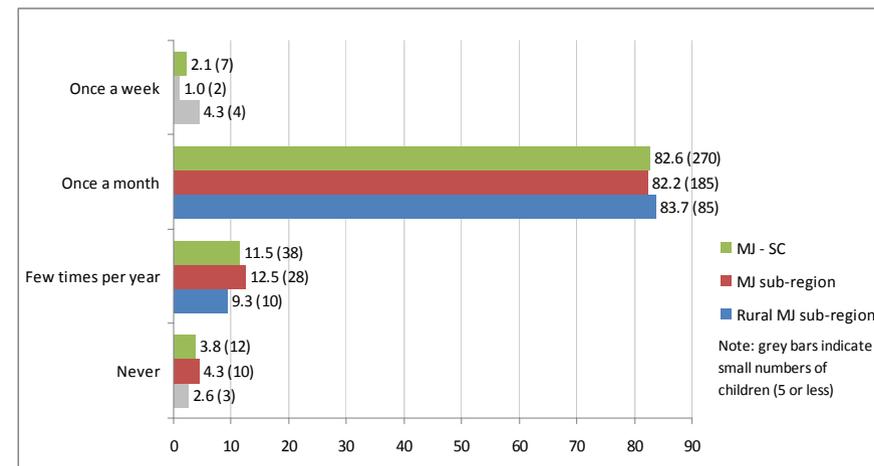


Figure 3.26 Frequency of children's use of recreational resources

Children in the MJ-SC region watched television or videos on average about 1.8 hours per day, which is above the Canadian average of 1.6 hours per day. Children in single parent and low-income families spent more time watching television and playing videos. Also, the average screen-time for girls was slightly higher than that of boys.

Figure 3.27 shows the patterns of usage for entertainment and cultural resources. Most children used such resources a few times per year or less (55.0%). Generally, children from the rural sub-region used entertainment and cultural resources more frequently than children from the Moose Jaw sub-region: 26% of rural children used such resources once a week compared to 16.8% of urban children. Likewise, more urban children used entertainment and cultural resources a few times per year or less (57.7% versus 49.0%).

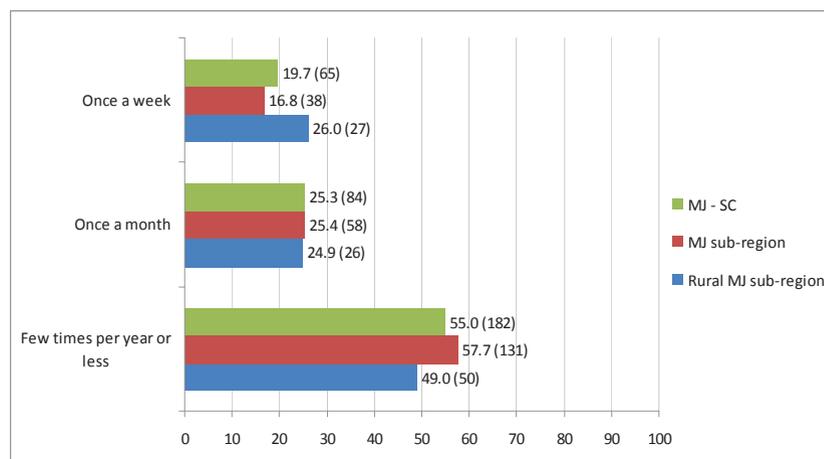


Figure 3.27 Frequency of children's use of entertainment and cultural resources

Based on Figure 3.28, a majority of children in the MJ-SC region used educational resources relatively infrequently. Approximately 48.8% of children used educational resources a few times per year or less, while only 10.0% and 17.1% of children used educational resources once a month and once a week, respectively. Generally, children from the rural sub-region used educational resources more frequently than

their urban counterparts: 26.7% of rural children used educational resources once a week compared to 12.2% of urban children, while 26.5% of urban children never used educational resources versus 19.6% of rural children.

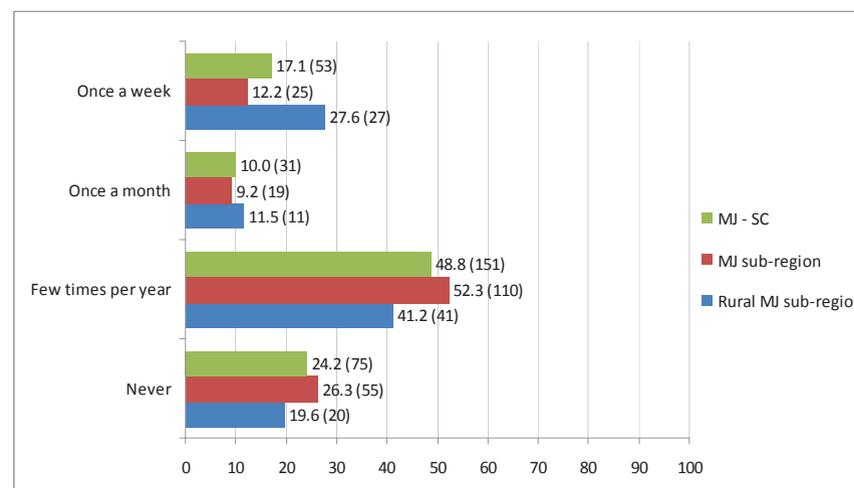


Figure 3.28 Frequency of children's use of educational resources

### 3.4.8 CHILD CARE

Overall, most parents (73.2%) used some form of child care arrangements (Figure 3.29), though fewer parents from the rural sub-region used child care (66.6%) than those in Moose Jaw (76.5%). The average total number of hours children spent in child care per week in the MJ-SC region was 15.95 hours, with children in Moose Jaw spending almost two hours a week more in care than their rural counterparts.

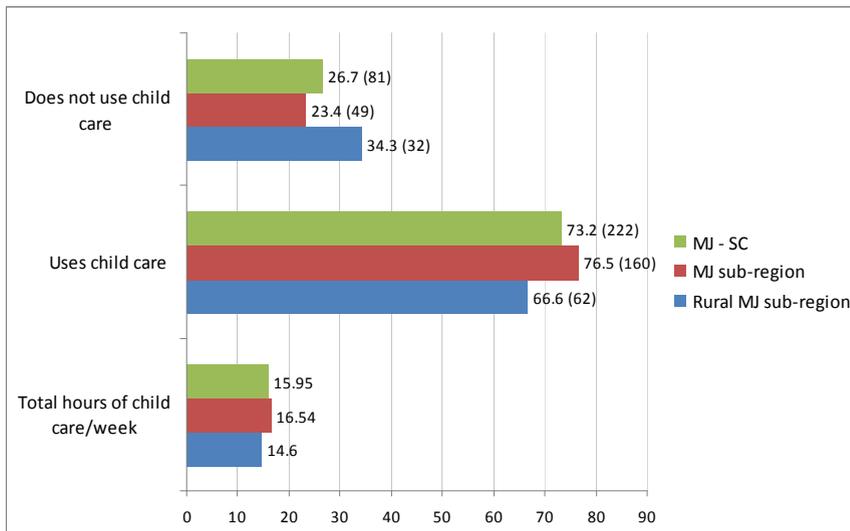


Figure 3.29 Use of child care arrangements and average total hours of child care per week

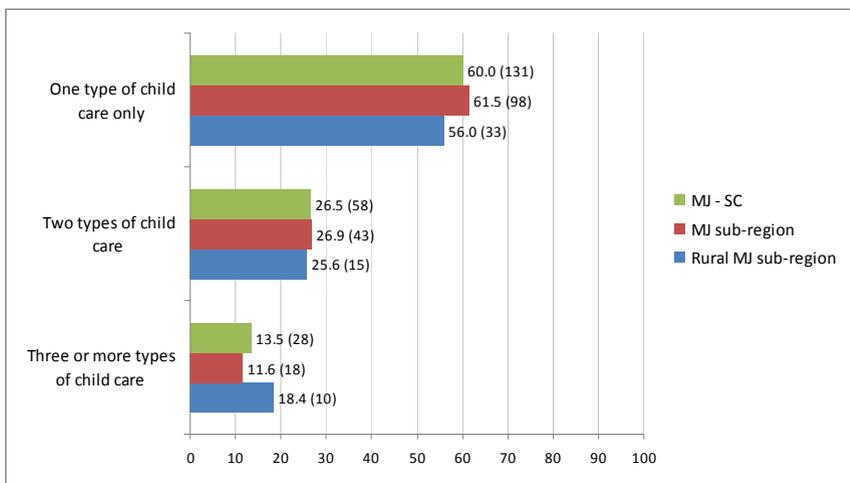


Figure 3.30 Number of types of child care arrangements used

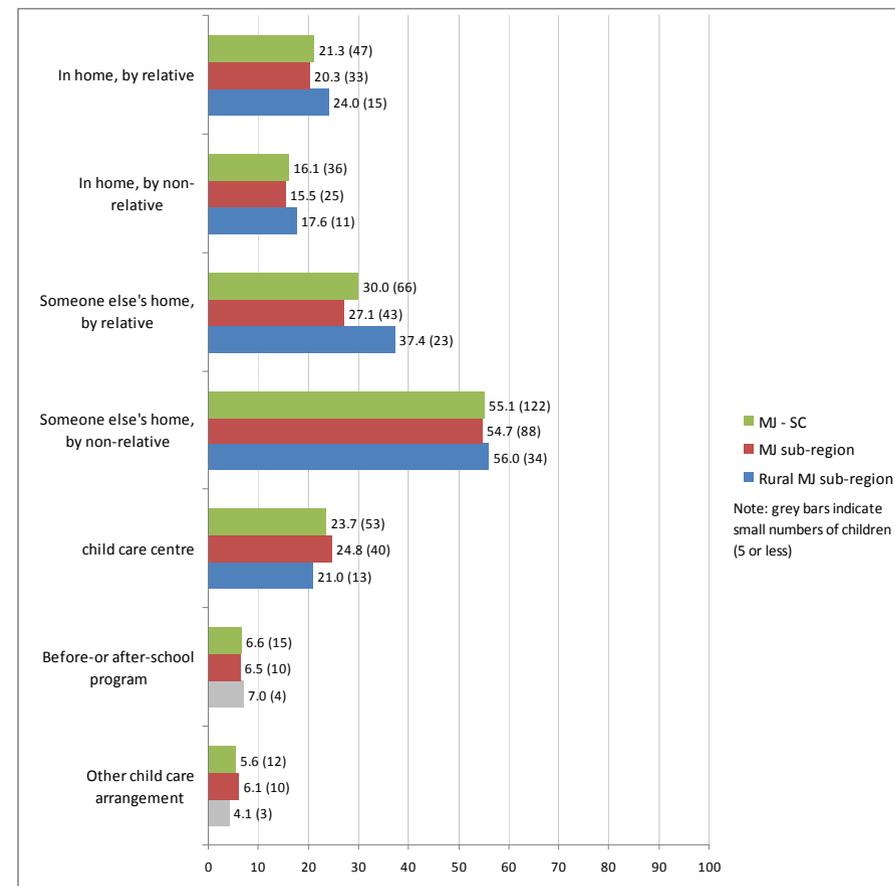


Figure 3.31 Types of child care arrangements used

As illustrated in Figure 3.30, most families used only one type of child care (60.0%). Overall, relatively few parents used three or more types of child care (13.5%) though variability is found between sub-regions, with 11.6% of families from the Moose Jaw sub-region using more

than three types of child care arrangements compared to 18.4% (10 families) from the rural sub-region.

Figure 3.31 shows the types of child care arrangements used by MJ-SC parents. The most common type of child care used was care by a non-relative in someone else’s home (used by 55.1% of families), followed by care in someone else’s home by a relative (30.0%) and, lastly, child care centres (23.7%). Compared to the Moose Jaw sub-region, families from the rural sub-region were more likely to use child care in their own home by a relative (24.0% versus 20.3%) or a non-relative (17.5% versus 15.5%), and in someone else’s home by a relative (37.4% versus 27.1%) or a non-relative (56.0% versus 54.7%). In contrast, approximately 24.8% of Moose Jaw families used child care centres compared to 21.0% of rural families.

### 3.4.9 NEIGHBOURHOOD CHARACTERISTICS AND SOCIAL SUPPORT

Figure 3.32 highlights the neighbourhood characteristics within the MJ-SC sub-regions. Considerably fewer people living in this region, especially in the rural sub-region, considered their neighbourhoods to be of high quality, compared to the national average of 77.0%. This was especially so in the rural sub-region, where less than half (48.6%) rated their neighbourhood as high quality; the Moose Jaw sub-region, at 73.1%, was much closer to the national average. This likely reflects the lack of community and educational resources (i.e., schools, pools, playgrounds) and poor access to public transportation found in many rural areas.

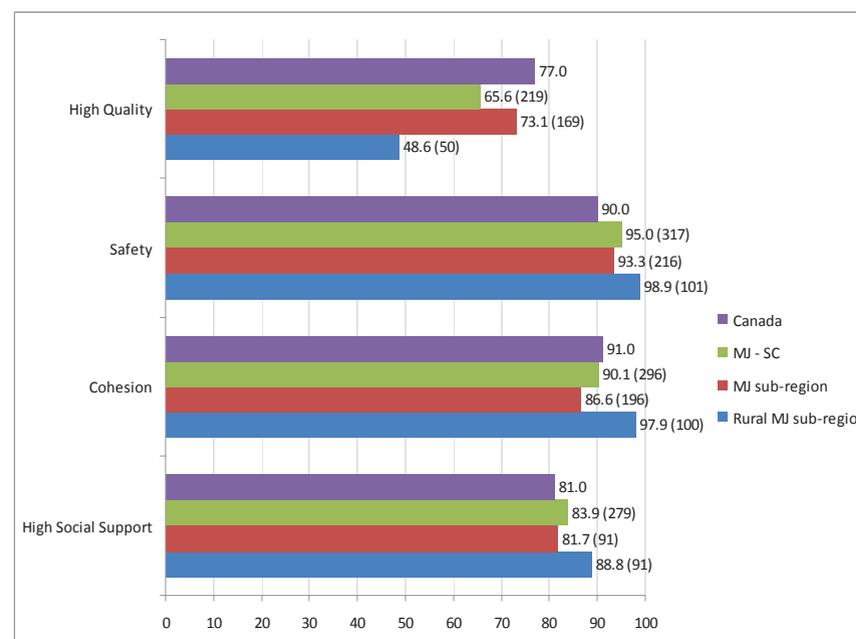


Figure 3.32 Percentage (number) reporting high levels of neighbourhood quality, safety, cohesion and social support

In terms of safety, on the other hand, MJ-SC neighbourhoods fared much better. Higher rates of safety were found in both sub-regions (93.3% in Moose Jaw and 98.9% in the rural sub-region) compared to the Canadian norm (90.0%). Neighbourhood levels of cohesion showed more variability between the two sub-regions, with a higher rate found in the rural sub-region (98.9%) than in Moose Jaw (86.6%); the overall figure for the MJ-SC region is close to the Canadian norm of 91.0%.

Finally, 83.9% of participants believed they have high levels of social support, slightly above the national average of 81.0%. As is the case for safety and cohesion, those living in the rural sub-region rated their social environment more positively, with 88.8% indicating high levels of social support compared to 81.7% in Moose Jaw.

### 3.5 PRE-SCHOOL EDUCATION AND SCHOOL READINESS

Does attending pre-school or pre-kindergarten help children develop school readiness? We compared the children in the MJ-SC region who, according to their kindergarten teacher, had attended some type of schooling prior to kindergarten to those who had not. Those children who had attended pre-school or pre-kindergarten were less likely to be considered vulnerable in one or more domains than those who had not had any pre-school education (see Figure 3.33). However, there was no difference between the two groups in terms of the proportion of children vulnerable on any of the five EDI domains.

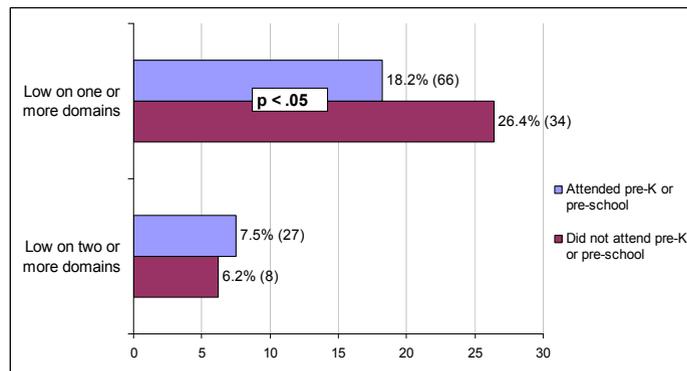


Figure 3.33 Percentage (number) of children scoring low on one or more EDI domains, comparing those who attended pre-K or pre-school to those who did not

### 3.6 AT-RISK BIRTHS

School readiness, measured by the EDI at kindergarten age, may be influenced by many factors, beginning *in utero*. The following section presents the proportion of at-risk births within the Moose Jaw-South Central area from 2002-09, based on the In-Hospital Birth Questionnaire (IHBQ), and explores the relationship between maternal characteristics and birth status.

Figure 3.34 illustrates the prevalence of at-risk births from 2002 to 2009, overall and for each year. The proportion of at-risk births ranged from approximately 15% to 23%, with an average of 17% over the seven years. The highest prevalence was found in the most recent year, 2009 (22.6%), but there is no evidence of an increasing trend over time.

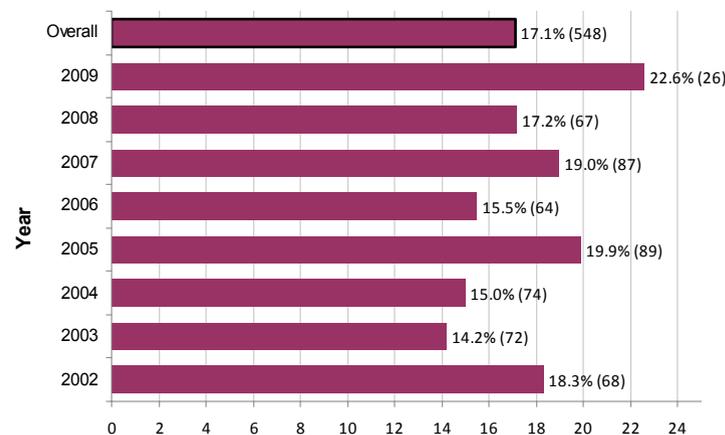


Figure 3.34 Percentage (number) of births considered at-risk, for all years and by year, 2002-2009

Figure 3.35 indicates that women under the age of 19 were most likely to have at-risk births, followed by those between the ages of 19 and 24<sup>4</sup>. Over all years, approximately 72.5% of women under 19 years had at-risk births versus 22.5% of those aged 19 to 24 and 11.5% of those 25 and older. The proportion of at-risk births has fluctuated somewhat over the years within each age group, with greater variability seen in the youngest group, likely because it is relatively small. There is no evidence of a shift over time in any of the groups.

Combining the information for all eight years, the proportion of at-risk births varied substantially among study areas, ranging from 9.8% to 26.7% (see Figure 3.35). In three areas, one in five births or more was at-risk: East End (26.7%), South Hill East (23.3%), and the William Grayson area (20%). These study areas, along with the King George area, had the highest SRI scores.

Figure 3.37 shows the proportion of at-risk births within each age category for each study area. In all study areas, women under the age of 19 were most likely to have an at-risk birth, and in most areas, those aged 25 and over were least likely. The percentage of births within each age category that were considered at-risk varies considerably across study areas; among women aged 19-24 and 25 and older, there is a three-fold difference between the lowest and highest proportions. East End had the highest number of births in each age group, and the highest or second highest likelihood of an at-risk birth within each group.

<sup>4</sup> It should be noted that one of the factors included in the at-risk birth score is mother's age, with those aged 15 and under receiving 9 points and therefore being automatically 'at risk;' mothers aged 16 or 17 receive 8 points and those aged 18 or 19 receive 5.

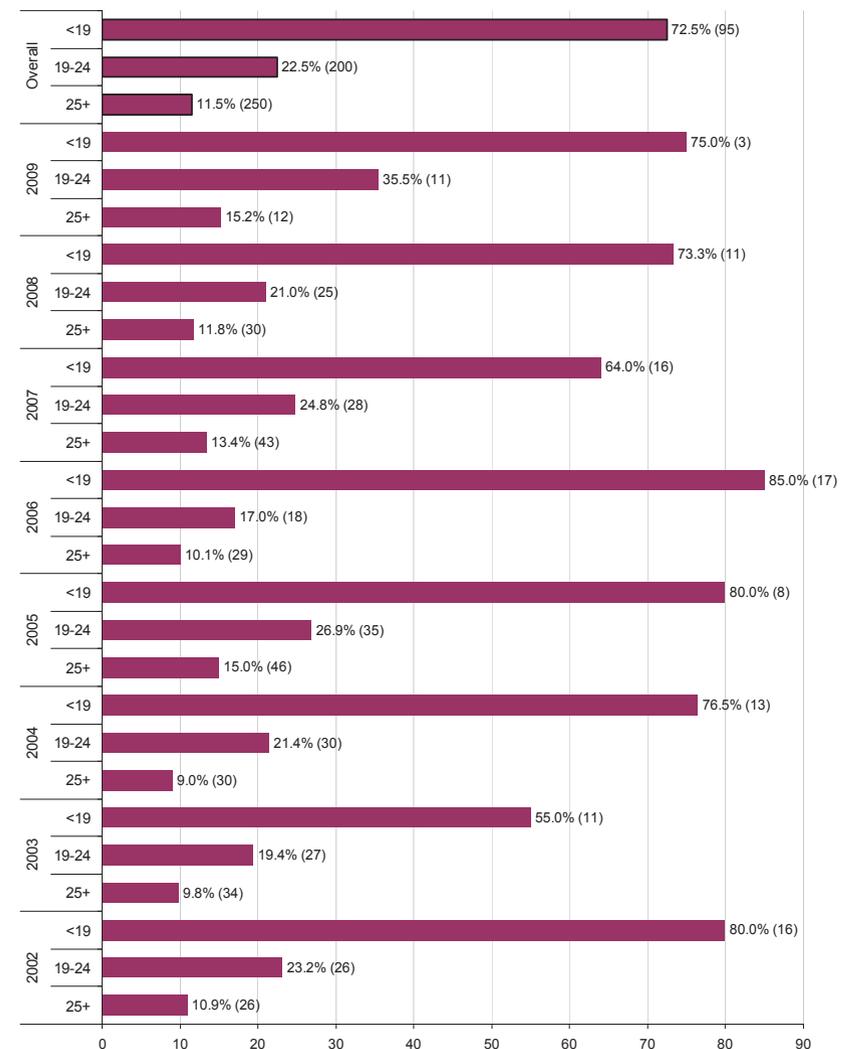
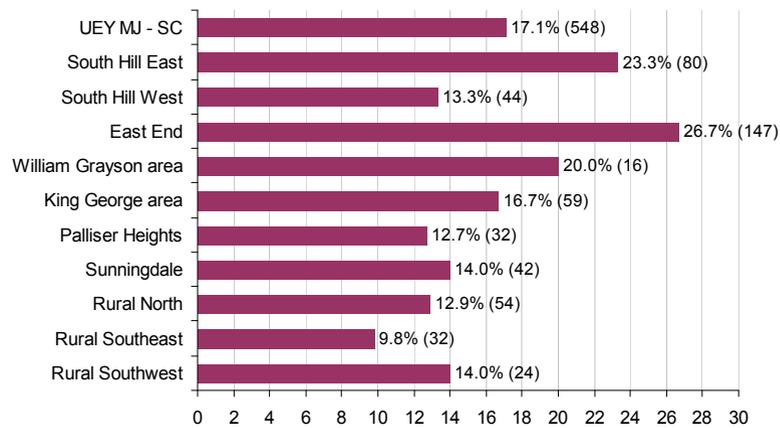


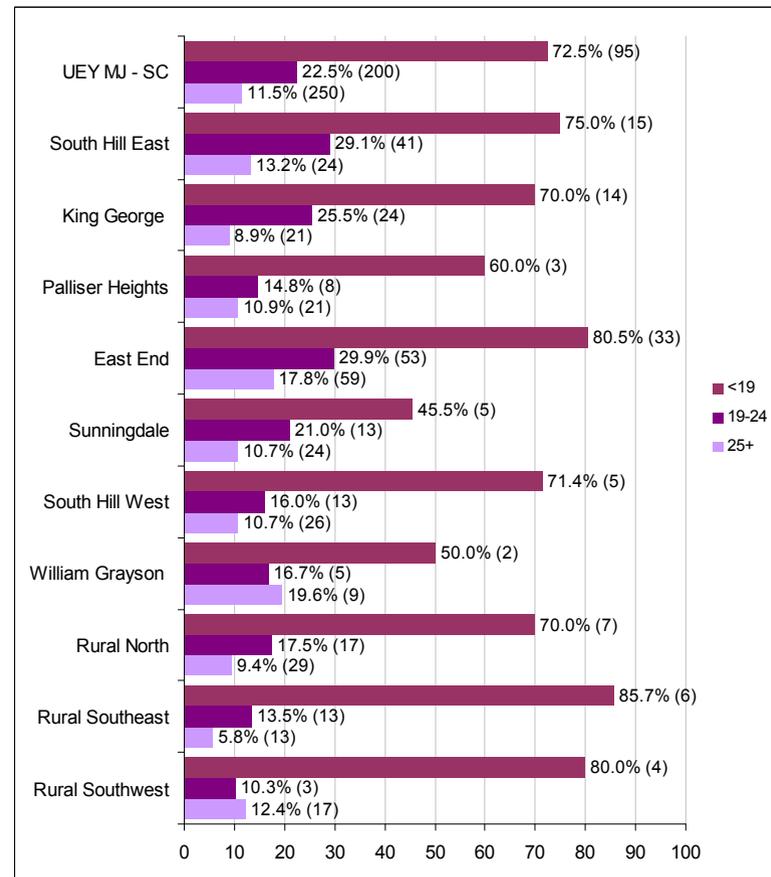
Figure 3.35 Percentage (number) of births considered at-risk by mother's age category, for all years and by year, 2002-2009



**Figure 3.36 Percentage (number) of births considered at-risk by study area, 2002 to 2009**

In terms of mother’s ethnicity, across all study areas, Aboriginal women had a higher prevalence of at-risk births compared to their non-Aboriginal counterparts: overall, 53.5% of births to Aboriginal women were at-risk, compared to 16.6% among non-Aboriginal mothers.<sup>5</sup>

<sup>5</sup> Very few women who completed the IHBQ during the years 2002 to 2009 identified themselves as being of Aboriginal descent. Four study areas had no births to Aboriginal mothers and the others had very few. Consequently, we do not present data comparing Aboriginal and non-Aboriginal births broken down by study area.



**Figure 3.37 Percentage (number) of births considered at-risk by mother’s age and study area, 2002 to 2009**

# 4

## Conclusions and Topics for Community Discussion

### 4.1 KEY FINDINGS

- On the positive side, kindergarten students in the Moose Jaw-South Central region overall are doing well in all areas of school readiness, in comparison to the Canadian norm, particularly in the domains of social competence and communication skills and general knowledge; they are also much less likely to be vulnerable in one or more domains than the norm.
- However, one in five children in the region (109 in total) enters the school system vulnerable, meaning that they are behind in at least one area of development.
- Moreover, there is considerable disparity within the region; in each domain, study areas varied considerably in terms of the proportion of children considered vulnerable, with percentages ranging from 0% to almost 19%.
- Children in the William Grayson area performed well in more domains than any other study area, having less than half as many children considered vulnerable as the norm in four domains.
- East End, on the other hand, had more vulnerable children than the norm in three domains (language and cognitive development, emotional maturity, and physical health and wellbeing), and one third of its children are vulnerable in one or more domains; yet, in the social competence domain, this study area too had less than half as many considered vulnerable as the norm.
- The Rural Southwest, Palliser Heights, and South Hill East each had low percentages in three domains (but Palliser Heights also had a higher than normal percentage in one domain, as did South Hill East in two domains).
- Breaking down the domains into sub-domains reveals even greater variation, with many study areas having higher than normal percentages of children challenged in some sub-domains, even though the percent vulnerable on the domain as a whole was around or even below the norm.
- East End and the Rural Southeast showed the greatest number of sub-domains with above-normal percentages of children considered challenged, each with five; however, these study areas also had two and three sub-domains, respectively, in which the percentages of challenged children was less than half the norm.
- The Rural Southwest and Sunningdale had less than half the normal percentage of children vulnerable in 12 and 11 sub-domains, respectively (and only one sub-domain above the norm, in each of these study areas). The King George and William Grayson areas had low percentages in seven sub-domains and were above the norm in just two and one, respectively.
- Specific sub-domains in which more than one quarter of children were considered challenged are:
  - gross and fine motor skills: Sunningdale (48.1%) and the Rural Southeast (45.3%);

- prosocial and helping behaviour: William Grayson area (42.9%), the Rural North (38.5%), the Rural Southeast (34.4%), South Hill East (33.3%), South Hill West (32.5%) and the King George area (30.4%);
- and basic literacy and numeracy in East End (31.1% and 26.7%, respectively)
- Overall, study areas with higher social risk did not have more children considered vulnerable, nor was greater availability of resources associated with lower levels of vulnerability.
- When evaluated by a trained assessor, more children of the MJ-SC region received low scores on a test of early literacy skills than the Canadian norm, but they did much better than the national average on number knowledge, and about the same or slightly better in terms of receptive language. This is fairly consistent with the EDI results for the language and cognitive development domain, although the students assessed for PIDACS performed somewhat worse in terms of early literacy skills than on the basic literacy sub-domain, and somewhat better on the number knowledge test than on the basic numeracy sub-domain.
- The prevalence of children with behavioural problems according to parent interviews was similar to or lower than the Canadian norm, with the exception of prosocial behaviour, which was more likely to be lacking among children in this region, especially those in the rural sub-region. In contrast, according to the EDI, the proportion of children considered challenged in the sub-domain of prosocial behaviour was slightly below the Canadian norm.
- About one in ten children in the region has a functional health problem that limits his or her activities. The frequency of

depressive symptoms and anxiety was similar to the Canadian norm and slightly more common in Moose Jaw than in the rural areas.

- Families in the region were comparable to the Canadian average in terms of the likelihood of poor family functioning, and less likely to have experienced maternal depression in the preceding week. On both these indicators, the rural sub-region fared slightly better. However, families in both rural and urban sub-regions were substantially less likely than the Canadian average to use an authoritative parenting style, which has been associated with better developmental outcomes.
- Almost three quarters of parents use some type of child care, with the most common type being care in someone else's home by a non-relative.
- Close to three quarters of those living in Moose Jaw consider their neighbourhood to be of high quality, compared to less than half

*More children in the MJ-SC region received low scores on a test of early literacy skills than the Canadian norm, but they did much better than the national average on number knowledge, and about the same or slightly better in terms of receptive language*

of those in the rural sub-region. On the other hand, almost everyone living in the rural area rated their neighbourhood high on safety and cohesion; the rates for Moose Jaw were lower, but not far from the Canadian average. Similarly, rural residents were more likely than those living in Moose Jaw and the average Canadian to consider that they have high levels of social support.

- Attending pre-school or pre-kindergarten was not associated with better performance on any of the five EDI domains in kindergarten. However, those with some kind of pre-school education were less likely to be considered vulnerable in one or more domains than those without. (This does not necessarily mean that attending pre-school reduced their vulnerability; rather, it may be that children whose parents send them to pre-school are 'readier to learn' than those who do not.)
- From 2002 to 2009, an average of 17% of births in the MJ- SC region were considered at-risk, based on the In-Hospital Birth Questionnaire, with younger women and Aboriginal women most likely to have at-risk births.
- The proportion of at-risk births varied substantially among study areas, with three—East End, South Hill East, and the William Grayson area—experiencing one in five or more at-risk births. These areas are among those with the highest social risk scores.

#### **4.2 USING THIS INFORMATION TO IMPROVE CHILDREN'S WELLBEING**

The finding that the study areas with the highest social risk scores had the highest proportions of at-risk births (with the exception of the



King George area) is consistent with research that has shown an association between the factors included in the Social Risk Index and poorer health and development in young children. This could explain the higher levels of subsequent vulnerability among kindergarten students in the East End neighbourhood of Moose Jaw, which had the highest proportion of vulnerable children of all the study areas (above the norm in three domains, and above normal percentage of children vulnerable in more than one domain). However, another neighbourhood, the William Grayson area, which scored as high as East End on the SRI (6) and where one in five births is considered 'at-risk,' had below normal percentages of vulnerable children in every domain, as well as being below the norm for percent vulnerable in more than one and more than two domains<sup>6</sup>.

<sup>6</sup>Interpreting the differences between study areas is complicated by the small number of kindergarten students assessed in the William Grayson area, which may create instability in the findings.

What is going on in the William Grayson area to explain these impressive results? It appears that something may be happening in this neighbourhood between birth and kindergarten that would be worth examining. Overall access to services and programs is not likely to be the answer, because the William Grayson area had the lowest RA score of any study area (7), while East End's RA score was almost three times as high (18).

However, one caution about the correspondence between RA scores and vulnerability should be noted: for some types of resources, it is good practice to locate services where need is greatest, which would contribute to higher RA scores in neighbourhoods with higher social risk. This should not be taken to mean that more resources cause greater vulnerability in children. Furthermore, the RA scores include a wide range of services and programs. Especially when looking at sub-domains, it would be more helpful for communities to consider the resources that relate specifically to the skills and abilities in which their children need improvement (e.g., access to libraries is more relevant to the sub-domain of basic literacy than sports and recreation programs).



An assessment of possible barriers to resources, such as lack of transportation, unaffordable fees, inconvenient hours, and need for child care, could also be helpful. Furthermore, William Grayson is a small neighbourhood, close to other neighbourhoods, and there is a good possibility that children from William Grayson are accessing programs and services in other neighbourhoods that have

higher RA scores.

The lack of association between social risk and vulnerability within study areas, and between resource availability and vulnerability, makes it more difficult to understand why children are doing better in some study areas than others and consequently, what could be done to enhance their health and development. The measures of the social environment included in PIDACS—overall quality, safety, cohesion, and social support—have been shown in other research to be important contributors to wellbeing, including that of children. Overall, these were rated high to very high in Moose Jaw-South Central, with the notable exception of quality in the rural sub-region, and may help to explain the generally strong results found in this region. Unfortunately, the small numbers of families involved in PIDACS do not allow comparison with the EDI results because they cannot be broken down by study area. However, the findings from PIDACS do suggest some additional areas for improvement, such as

encouraging use of an authoritative parenting style and enhancing the quality of rural communities.

While the results in Moose Jaw-South Central indicate that kindergarten students in this region are generally well prepared to learn, compared to the Canadian norm, this does not mean that there is no room for improvement. As noted, one in five children is vulnerable in at least one domain. Furthermore, every study area had at least one sub-domain in which the percentage of children below the challenge cut-off was above the national norm, and these suggest very specific areas on which to focus additional intervention efforts. It is also important to note while we have used the national normative data for comparison, this is a relative rather than an absolute standard. For example, only two study areas fared worse than the norm in the sub-domain of prosocial and helping behaviour, but the norm is that almost one third of children are below the challenge cut-off. One could argue that being only slightly better than the norm is not sufficient.

It is hoped that through careful examination of the information contained in this report, those concerned with children's wellbeing in the Moose Jaw-South Central region will be able to apply their knowledge of their own communities and their diverse skills and perspectives to create policies, programs, and environments that equitably support optimal health and development in the early years.

*Through careful examination of the information contained in this report, those concerned with children's wellbeing in the Moose Jaw-South Central region will be able to apply their knowledge of their own communities and their diverse skills and perspectives to create policies, programs, and environments that equitably support optimal health and development in the early years.*

# References

Andrews, S. P., & Slate, J. R. (2001). *Prekindergarten Programs: A Review of the Literature*. Retrieved November 5, 2006, from Current Issues in Education On-Line: <http://cie.ed.asu.edu/volume4/number5/>.

Chao, R. K. & Willms, J. D. (2002). The effects of parenting practices on children's outcomes. In J. D. Willms, (Ed.), *Vulnerable Children: Findings from Canada's National Longitudinal Study of Children and Youth* (pp. 149-165). Edmonton, AB: University of Alberta Press.

Doherty G. (1997). *Zero to Six: the Basics for School Readiness*. Ottawa, Human Resources Development Canada, Applied Research Branch.

Emig, C. (2000). School Readiness: Helping Communities get Children Ready for School and Schools Ready for Children. Washington, DC, USA: Child Trends Research Brief.

Janus, M. (2006). Measuring community early child development. *The Canadian Association of Principals Journal*, 14(3), pp. 14-16.

Janus, M., & Duku, E. (2007). The school entry gap: Socioeconomic, family, and health factors associated with children's school readiness to learn. *Early Education and Development*, 18 (3), pp. 375-403.

Janus, M., & Offord, D. (2007). Developmental and psychometric properties of the early development instrument (EDI): A measure of children's school readiness. *Canadian Journal of Behavioral Science*, 39(1), pp. 1-22.

Muhajarine, N., Vu, L. & Labonte R. (2006). Social contexts and children's health outcomes: Researching across the boundaries. *Critical Public Health*, 16(3), pp. 205-18.

Murray, L., & Cooper, P. (1997). Effects of postnatal depression on infant development. *Archives of Disease in Childhood*, 72(2), 99-101.

Pianta, R. C. (2002). School readiness: A focus on children, families, communities and schools. *The Informed Educator Series*.

Policy Link. Equitable Development Toolkit: community mapping. Retrieved May 19th 2008 from <http://www.policylink.org/EDTK/Mapping/>

Racine, Y. & Boyle, M. H. (2002). Family functioning and children's behaviour problems. In J. D. Willms, (Ed.), *Vulnerable Children: Findings from Canada's National Longitudinal Study of Children and Youth* (pp. 199-210). Edmonton, AB: University of Alberta Press.

Shonkoff, J., & Phillips, D. (2000). From neurons to neighbourhoods: The science of early childhood development. Washington, DC, USA: National Academies Press.

Willms, J.D. (Ed.) (2002). *Vulnerable Children: Findings from Canada's National Longitudinal Survey of Children and Youth*. Edmonton: University of Alberta Press.

## Appendix A: Social Risk Index components for Moose Jaw-South Central study areas

Study Area	Single Parent Families	Low Education	Transience	Home Rental	Receipt of government transfers	Below LICO	Total SRI Score
Total SK (2006)	16.6	30.2	14.3	25.6	11.0	19.0	n/a
Total Moose Jaw	13.8	30.6	12.4	26.5	13.0	15.0	n/a
South Hill West	16.3	31.2	13.9	24.7	11.0	17.0	1
South Hill East	23.6	27.5	18.7	24.6	17.0	22.0	4
East End	22.0	40.1	14.9	49.4	25.0	26.0	6
William Grayson area	35.4	31.9	16.8	32.9	16.0	28.0	6
King George area	21.7	26.5	18.1	36.3	12.0	18.0	4
Palliser Heights	11.4	25.2	11.8	16.5	11.0	8.0	0
Sunningdale	6.9	20.8	13.4	26.3	8.0	9.0	1
Rural North	7.5	29.4	9.2	17.2	12.0	9.0	1
Rural Southeast	9.3	38.1	9.1	23.1	16.0	14.0	2
Rural Southwest	8.7	31.2	7.4	13.0	16.0	12.0	2

Note: Shaded cells are above the provincial average and therefore scored '1.'

# Appendix B: Detailed description of challenge cut-offs for EDI sub-domains

Domain/sub-domain	Challenge cut-off	Children below challenge cut-off on this subscale ...	% below cut-off in normative sample
<b>Physical Health and Wellbeing</b>			
<b>Physical readiness for school day</b>	6.249	vary from those who have experienced all four conditions at least sometimes, to those who have always experienced them	3.9
Being dressed appropriately Coming to school on time, not hungry or tired			
<b>Physical independence</b>	9.999	vary from those who have not developed one of the three skills (independence, handedness, coordination) and/or suck a thumb, to those who have not developed any of the skills and suck a thumb	8.9
Independence Handedness Coordination			
<b>Gross and fine motor skills</b>	6.499	vary from those who have a good ability to perform up to two of the five skills and average ability to perform the other three, to those who have poor abilities in all five	21.8
Holding pen, crayons or brush Manipulating objects Climbing stairs Level of energy through the school day Overall physical development			
<b>Social Competence</b>			
<b>Overall social competence</b>	4.999	vary from those who rate as average on the first two items and only sometimes demonstrate the behaviours described in the last three items, to those who rate as very poor on the first two items and never show any of the three behaviours	8.4
Overall social/emotional development Gets along with peers Cooperative Plays with various children Demonstrates self-confidence			
<b>Responsibility and respect</b>	4.999	vary from those who never show one of the behaviours, and the remaining seven sometimes, to those who never show any of the behaviours	4.7
Follows rules Respects property Demonstrates self-control Demonstrates respect for adults Demonstrates respect for other children Accepts responsibility for actions Takes care of materials Shows tolerance to someone who made a mistake			

Domain/sub-domain	Challenge cut-off	Children below challenge cut-off on this subscale ...	% below cut-off in normative sample
<b>Approaches to learning</b>	4.999	vary from those who never demonstrate one of the behaviours/skills but show all the remaining eight sometimes, to those who never show any of the nine behaviours/skills	8.1
Listens attentively Follows directions Completes work on time Works independently Works neatly and carefully Able to solve problems by him/herself Able to follow simple instructions Able to follow class routines Able to adjust to changes in routines			
<b>Readiness to explore new things</b>	4.999	vary from those who never show one of the behaviours and sometimes show the remaining three, to those who never show any of the four behaviours	3.2
Curiosity about the world Eager to play with a new toy Eager to play a new game Eager to play with/read a new book			
<b>Emotional Maturity</b>			
<b>Prosocial and helping behaviour</b>	4.999	vary from those who never show one of the behaviours and sometimes show the remaining seven, to those who never show any of the eight behaviours.	33.5
Help someone who has been hurt Clear somebody else's mess Try to stop a quarrel Offers help with a task Comforts a child who is upset Spontaneously helps Invite bystanders to join in Help children who are feeling sick			
<b>Anxious and fearful behaviour</b>	4.999	vary from those who often show one of the behaviours and only sometimes show the remaining seven, to those who never show any of the eight behaviours.	2.1
Upset when left at school Seems unhappy or sad Fearful or anxious Worried Cries a lot Nervous or tense Incapable of making decisions Excessively shy			
<b>Aggressive behaviour</b>	7.139	vary from those who sometimes show most of the seven behaviours, to those who often show all of them	7.8
Gets into physical fights Bullies or is mean Kicks, bites or hits others Takes things that do not belong to him/her Laughs at others Is disobedient Has temper tantrums			

Domain/sub-domain	Challenge cut-off	Children below challenge cut-off on this subscale . . .	% below cut-off in normative sample
<b>Hyperactivity and inattention</b>	5.709	Vary from those who sometimes show all seven behaviours, to those who often show all of them	13.1
Restless			
Distractible			
Fidgets			
Impulsive			
Difficulty awaiting turns			
Can't settle to anything			
Inattentive			
<b>Language and Cognitive Development</b>			
<b>Basic literacy</b>	7.499	Do not have three or more of the eight skills	11.0
Know how to handle a book			
Identify some letters			
Attach sounds to letters			
Show awareness of rhyming words			
Participate in group reading activities			
Experiment with writing			
Aware of writing directions			
Able to write own name			
<b>Interest in literacy/numeracy and memory</b>	7.999	Do not have two or more of the five skills	15.8
Interest in books			
Interest in reading			
Remember things easily			
Interest in mathematics			
Interest in games involving numbers			
<b>Advanced literacy</b>	3.329	Have only one or none of the six skills	19.4
Read simple words			
Read complex words			
Read sentences			
Write voluntarily			
Write simple words			
Write simple sentences			
<b>Basic numeracy</b>	8.569	Do not have two or more of the seven skills	14.2
Sort and classify			
Use one-to-one correspondence			
Count to 20			
Recognize numbers 1-10			
Compare numbers			
Recognize geometric shapes			
Understand simple time concepts			



