

**INDICATORS OF  
EARLY CHILDHOOD HEALTH  
&  
WELL-BEING IN BRITISH COLUMBIA**

**Third Report**

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## Executive Summary

From preconception to age six, the early years are considered a crucial time for the healthy development of children. Early childhood health and well-being have long-lasting positive effects on social, emotional and behavioural development throughout life.

British Columbia is accountable for reporting on the health and development of B.C.'s children. This is the third report on the *Indicators of Early Childhood Health & Well-Being in British Columbia*. In September 2000, all provinces (excluding Quebec<sup>1</sup>), the territories and the federal government agreed to regular reporting on a common set of indicators, based on the well-being of children aged 0 – 6.

The data for this report were collected in 2002/2003. British Columbia's performance on the common indicators was compared to previous years, and then benchmarked against the national average. This analysis provides insight as to how well B.C.'s children are doing compared to their national peers. The early childhood health and well-being indicators focus on five key areas: physical health; safety and security; early childhood development; family; and community.

Data for this report have been drawn from several sources, including Statistics Canada, Vital Statistics Birth Database, the British Columbia Vital Statistics Agency and the National Longitudinal Survey of Children and Youth (NLSCY). Additional data are also provided on the Status Indian population in British Columbia (Status Indian as defined by the *Indian Act*).

The third indicators report also provides baseline results from the Early Development Instrument (EDI) which is being implemented by the Human Early Learning Partnership (HELP) – a consortium of four British Columbia universities committed to providing evidence-based research about the early years. The EDI is designed to measure children's school readiness to learn in five developmental areas: physical health and well-being; emotional maturity; social competence; language and cognitive development; and communication skills and general knowledge. The EDI is a group-measure tool. It is not intended to be used as an individual diagnostic tool and can only be interpreted at the school or neighbourhood level.

### **A few highlights of British Columbia's early childhood health and well-being indicators:**

- In 1998/1999 and 2002/2003, 93% of children aged 0 – 3 years were being breastfed or had been breastfed. The national average was 84.2% in 2002/2003, an increase from 79.9% in 1998/1999.
- In 2002/2003, 17.9% of children aged 3 – 47 months displayed 'advanced' motor and social development skills, an increase from 16.0% in 1998/1999. The national average was 13.2% in 2002/2003 and 15.0% in 1998/1999.
- In 2002/2003, B.C.'s injury hospitalization rate (per 100,000 under 1 year of age) decreased to 280.2 from 456.7 in 1998/1999. The national rate decreased to 448.6 in 2002/2003 from 513.6 in 1998/1999.
- In 2002/2003, 73.4% of children aged 0 – 5 years in B.C. had an adult read to them, or an adult listened to the child read daily, an increase from 65.2% in 1998/1999. The national average increased to 67.3% in 2002/2003 from 58.2% in 1998/1999.

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<sup>1</sup> The Government of Quebec has stated that, while sharing the same concerns on early childhood development, Quebec does not adhere to the federal-provincial-territorial early childhood development initiative because sections of it infringe on its constitutional jurisdiction on social matters. Quebec intends to preserve its sole responsibility for developing, planning, managing and delivering early childhood development programs.

## **PART 1: Overview and Highlights**

## Overview

In September 2000, the First Ministers released a communiqué affirming their commitment to the well-being of children through a shared vision of early childhood development (ECD) as an investment in the future of Canada. As part of the public reporting commitments outlined in the communiqué, First Ministers committed to making regular public reports on outcome indicators of child well-being using an agreed upon set of common indicators.

British Columbia released its baseline indicators report in 2002, based on 1998/1999 data. The second report was released in September 2005 which covered data up to 2000/2001. For this third report, British Columbia reported on data from 2002/2003.

### Objectives

These indicators are based on the following ECD objectives:

- To promote early childhood development so that children will be physically and emotionally healthy, safe and secure, ready to learn and socially engaged and responsible.
- To help children reach their full potential and help families support their children within strong communities.

Factors such as the child's family, extended family and community, play a significant role in determining the outcomes for children. Government also plays an important role in supporting capacity for children and families by creating conditions for a healthy economy, providing social assistance and ensuring education, health care and other benefits meet the needs of British Columbians.

For the early years, funding for ECD provides a continuum of supports, such as: pregnancy outreach and parenting programs; early intervention and rehabilitation therapies; immunizations; publications for parents; nursing and in-home supports; programs for children with special needs; early language and literacy programs; Aboriginal programs and services; autism intervention programs; counselling and mental health services; family resource programs; and parent literacy programs.<sup>2</sup>

Investments in ECD are long-term commitments, with outcomes that will be realized over time. Data collection is required over time to monitor meaningful change and inform government planning and policy making.

### Indicators Framework

All jurisdictions (except Quebec) have agreed to report on 11 indicators related specifically to child outcomes. A broader set of 12 optional indicators related to child, family and community outcomes have been identified, while four other indicators are also reported in B.C.'s report.

The common framework for measuring child well-being is outlined below:

- Physical health and motor development;
- Emotional health;
- Social knowledge and competence;
- Cognitive learning; and
- Language and communication.

<sup>2</sup> Descriptions and updates of programs and services can be found in BC's 2003/2004 and 2004/2005 Early Childhood Development and Early Learning and Child Care Annual Reports ([http://www.mcf.gov.bc.ca/early\\_childhood/index.htm](http://www.mcf.gov.bc.ca/early_childhood/index.htm)).

## Data Sources

Data for this report have been drawn from several sources, including Statistics Canada, Vital Statistics Birth Database, the British Columbia Vital Statistics Agency and the National Longitudinal Survey of Children and Youth (NLSCY). Additional data are also provided on the Status Indian population in British Columbia (Status Indian as defined by the *Indian Act*). Relatively consistent and reliable data exist primarily for Status Indian population, which makes up approximately 65% of all British Columbia's Aboriginal population. Although the report uses Status Indian as a close proxy for indicators of the Aboriginal population, the interpretive value of these data is somewhat limited since it is not reflective of the broader Aboriginal population in British Columbia.

## Early Childhood Development Instrument

The Early Development Instrument (EDI) is a 120-item questionnaire filled out by kindergarten teachers on all the children in their classes. Information collected using the EDI is analyzed at a group level (for a school or a neighbourhood) and is not used as a diagnostic tool for individual children.

The EDI questionnaire gathers data on five areas of children's development:

- Physical health and well-being;
- Social competence;
- Emotional maturity;
- Language and cognitive development; and
- Communication skills and general knowledge.

This report provides data on children's readiness to learn in kindergarten based on the EDI, which has been implemented province-wide. The EDI cannot be directly compared to other indicators in this report, but it enhances our understanding about how well families and communities prepare young children for school. Since 2000, all school districts have implemented the EDI, reaching over 95% of kindergarten children in British Columbia.<sup>3</sup>

## How are the EDI results used?

The EDI results are currently being used by many different agencies in B.C. as a catalyst for the creation (or strengthening) of broad local coalitions that focus on the development of young children in their communities. In this way, the EDI has served to stimulate and facilitate discussion among teachers, parents, schools, government and community agencies on the early childhood program needs within their communities. EDI results have helped these stakeholders all over B.C. to reflect on early childhood programs in the community and to target funds and resources where they will be most useful.

## Considerations

The information in this report provides a good starting point for monitoring, analyzing and reporting on health and well-being of children in B.C. However, it is important to note that while the data included in the report may suggest trends, in some cases a trend may not be strong enough to form the basis of firm conclusions. Readers should also be mindful that interpretations of the data are limited by the nature of the data itself and that broader conclusions about the meaning of the data may not be appropriate.

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<sup>3</sup> EDI results are from February 2005.

## **The National Longitudinal Survey of Children and Youth (NLSCY)**

The NLSCY is a joint Human Resource Development Canada and Statistics Canada study aimed at determining the factors that influence children's health over time. The study began collecting information in 1994 on an initial 23,000 children and families in households that were currently or had recently been in the Labour Force Survey, with children aged 0 – 11 years, excluding Aboriginal children living on Reserves and children in institutions. Follow-up surveys have been conducted every two years. A variety of children's health factors are considered, including literacy, leisure, parenting and child care.

### **Future Reports**

The indicators in this report provide measures upon which future reports will be based and allow comparison over time. British Columbia's fourth report on *Indicators of Early Childhood Health & Well-Being in British Columbia* is expected to be released in Fall 2007.

## Highlights

### Physical Health

- In 2002, 5.3% of B.C. babies were born with low birthweights (less than 2,500 grams), an increase from 5.1% in 1998. The national average was 5.7% in 2002 and 1998.
- In 2002, the percentage of preterm births (gestational age <37 weeks) in B.C. was 7.1%, an increase from 6.4% in 1998. The national average was 7.5% in 2002, an increase from 7.2 in 1998.
- In 1998/1999 and 2002/2003, 93% of children aged 0 – 3 years were being breastfed or had been breastfed. The national average was 84.2% in 2002/2003, an increase from 79.9% in 1998/1999.

### Safety and Security

- In 2002/2003, B.C.'s injury hospitalization rate (per 100,000 under 1 year of age) decreased to 280.2 from 456.7 in 1998/1999. The national rate decreased to 448.6 in 2002/2003 from 513.6 in 1998/1999.

### Early Development

- In 2002/2003, 10.6% of B.C. children aged 3 – 47 months exhibited 'delayed' motor and social development skills, a decrease from 13.3% in 1998/1999. The national average decreased to 13.6% in 2002/2003 from 13.9% in 1998/1999.
- In 2002/2003, 17.9% of children aged 3 – 47 months displayed 'advanced' motor and social development skills, an increase from 16.0% in 1998/1999. The national average was 13.2% in 2002/2003 and 15.0% in 1998/1999.
- In 2002/2003, 18.8% of B.C. children aged 4 – 5 years displayed 'advanced' receptive language skills, an increase from 14.4% in 1998/1999. The national average increased to 17.3% in 2002/2003 from 13.3% in 1998/1999.

### Family

- In 2002/2003, the proportion of children aged 0 – 5 years whose primary caregiver exhibited high levels of depression was 8.8%, a decrease from 10.8% in 1998/1999. The national average decreased to 9.3% in 2002/2003 from 11.2% in 1998/1999.
- In 2002/2003, 12.9% of B.C. children's mothers smoked during pregnancy, a decrease from 13.2% in 2000/2001. The national average decreased to 15.9% in 2002/2003 from 19.4% in 1998/1999.
- In 2002/2003, 73.4% of children aged 0 – 5 years in B.C. had an adult read to them, or an adult listened to the child read daily, an increase from 65.2% in 1998/1999. The national average increased to 67.3% in 2002/2003 from 58.2% in 1998/1999.

### Community

- 12.0% of B.C. parents indicated that their children lived in neighbourhoods defined as having low levels of cohesion, a decrease from 14.5% in 1998/1999. The national average decreased to 13.0% in 2002/2003 from 15.1% in 1998/1999.



## **PART 2:**

# **Indicators of Early Childhood Health & Well-Being in British Columbia**

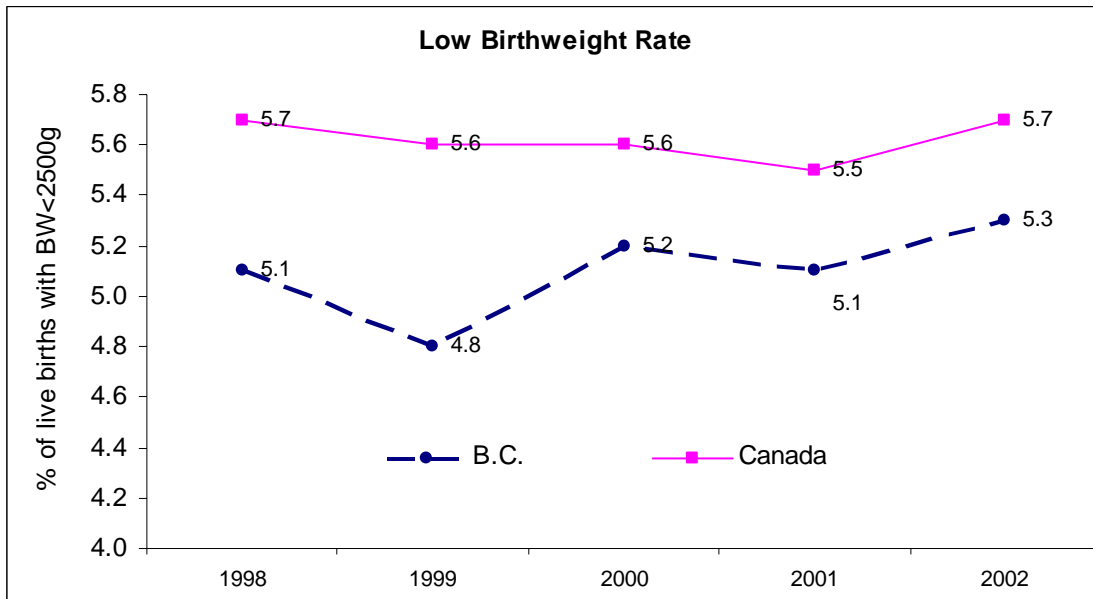
# 1.0 Physical Health

## 1.1 Birthweight

### a) Low Birthweight

Babies born with low birthweight (less than 2,500 grams) are likely to develop health problems and face increased risk of infant mortality. Low birthweight is a strong indicator of infant health and development and has been linked to physical disability, heart disease, diabetes, learning disabilities, vision difficulties, chronic respiratory problems and cerebral palsy. The prevention of low birthweight is an important perinatal health issue in British Columbia.

**In 2002, 5.3% of B.C. babies were born with low birthweights, lower than the national average of 5.7%.**



Source: Canadian Vital Statistics – Birth Database (Statistics Canada).

Statistics Canada, Births, 1998, Cat. No. 84F0210XPB, p. 8

Statistics Canada, Births, 1999, Cat. No. 84F0210XPB, p. 8

Statistics Canada, Births, 2000, Cat. No. 84F0210XPB, p. 8

Statistics Canada, Births, 2001, Cat. No. 84F0210XPB, p. 8

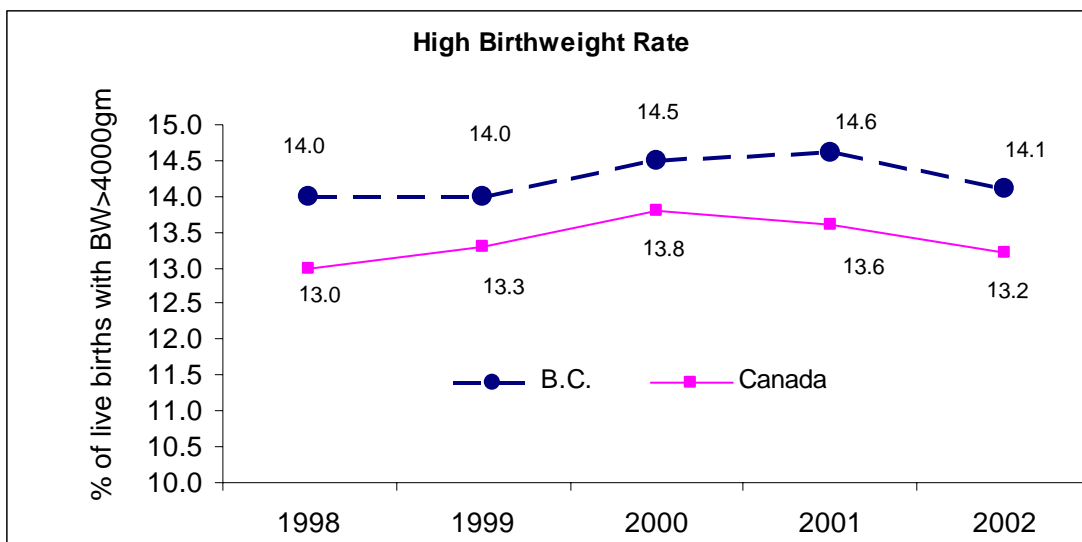
Statistics Canada, Births, 2002, Cat. No. 84F0210, p. 21

Caveats: data excluded births with unknown birthweight and births to non-Canadian residents.

## b) High Birthweight

Babies born with high birthweight (equal to or over 4,000 grams) are at significant risk of experiencing complications during pregnancy. High birthweight may increase an infant's disposition to certain chronic conditions in adulthood, including obesity, high blood pressure, diabetes and breast cancer. Birthweight may be influenced by the following factors: socio-economic conditions, maternal age, maternal weight, previous births by the mother, maternal nutrition, maternal smoking, illness during pregnancy, diabetes and length of the pregnancy factors.

**In 2002, the proportion of B.C. children born with high birthweight was 14.1%, lower than 14.6% in 2001 and slightly above the 2002 national average of 13.2%.**



Source: Canadian Vital Statistics – Birth Database (Statistics Canada).

Statistics Canada, Births, 1998, Cat. No. 84F0210XPB, p. 8

Statistics Canada, Births, 1999, Cat. No. 84F0210XPB, p. 8

Statistics Canada, Births, 2000, Cat. No. 84F0210XPB, p. 8

Statistics Canada, Births, 2001, Cat. No. 84F0210XPB, p. 8

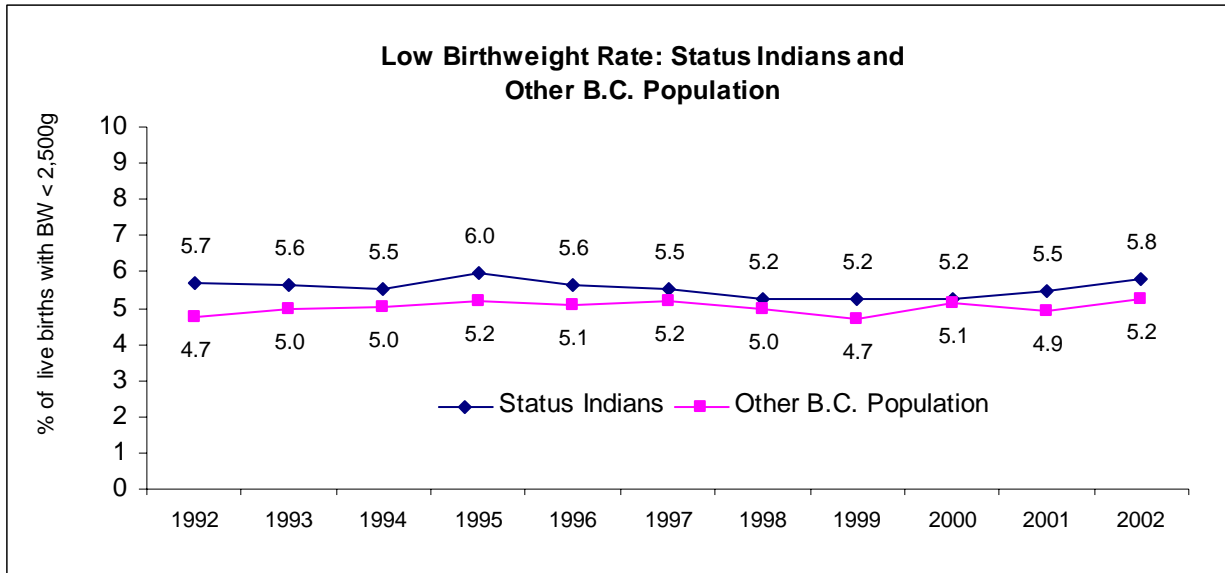
Statistics Canada, Births, 2002, Cat. No. 84F0210, p. 21

Caveats: data excluded births with unknown birthweight and births to non-Canadian residents.

### c) Low Birthweight: Status Indians and Other British Columbians

Over the reported periods, Status Indian low birthweight rates have been consistently higher than the rates for other British Columbians. However, the gap between low birthweight rates of the two population groups has narrowed over this period.

**In 2002, 5.8% of B.C. Status Indians were born with low birthweight, higher than the rate of 5.2% for other British Columbians.**

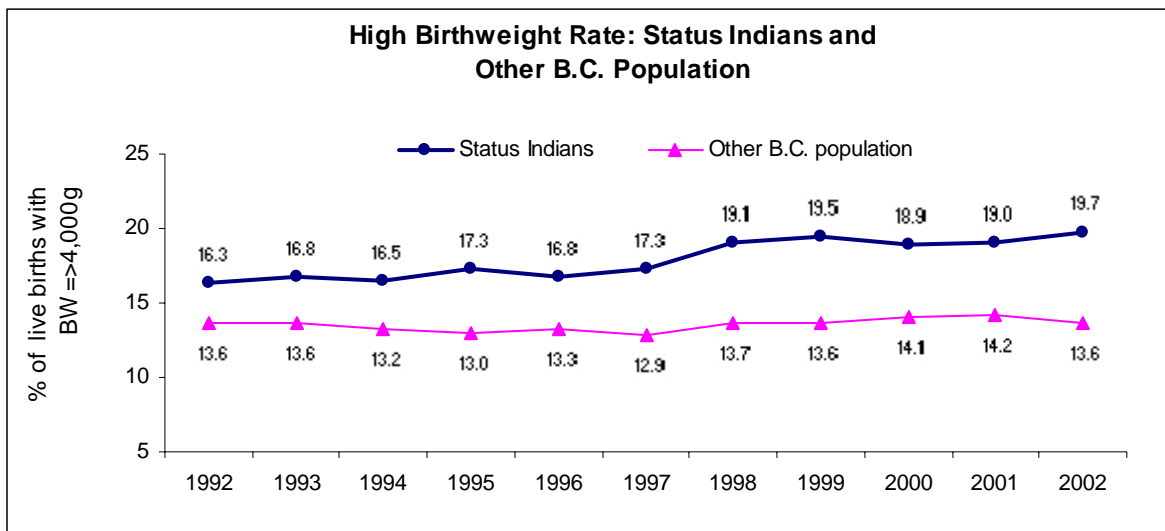


Source: British Columbia Vital Statistics Agency, "Regional Analysis of Health Statistics for Status Indians in British Columbia, 1992-2002", pp. 94 and 95.

#### d) High Birthweight: Status Indians and Other British Columbians

High birthweight rates in Status Indians continue to rise, but remain virtually unchanged from 1992 to 2002 for other B.C. populations.

**In 2002, 19.7% of B.C. Status Indians were born with high birthweight, higher than the rate of 13.6% for other British Columbians.**

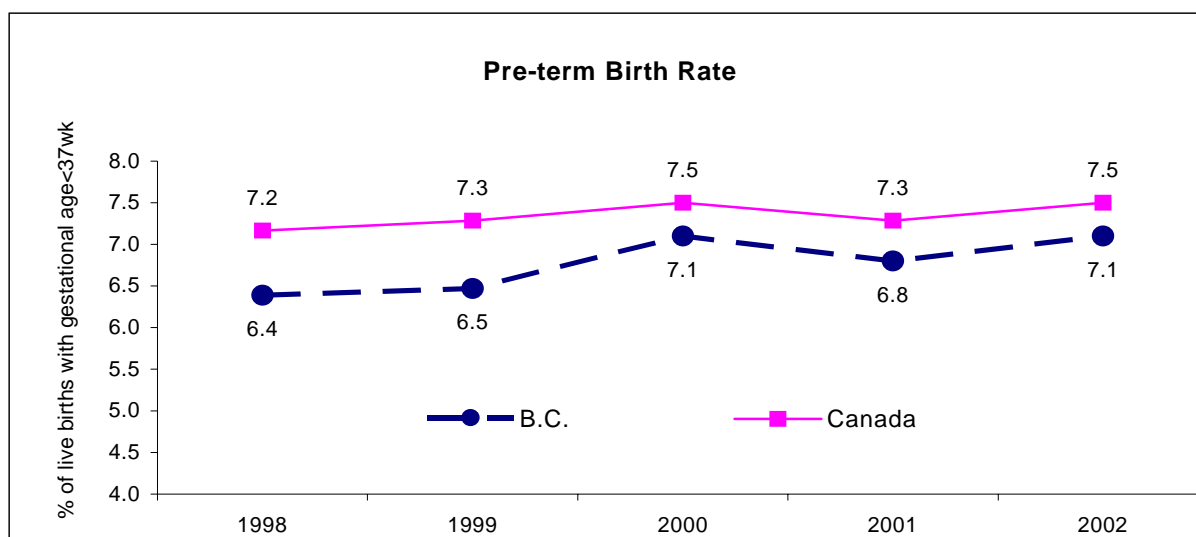


Source: Vital Event Information Management, Knowledge Integration & Development Knowledge Management and Technology Division, Ministry of Health. Regional Analysis of Health Statistics for Status Indians in British Columbia 1992-2002, B.C. Vital Statistics Agency.

## 1.2 Pre-term Birth

The pre-term birth rate is the percentage of live births with a gestational age of less than 37 completed weeks. Pre-term birth is associated with higher rates of perinatal illness, neonatal death and long-term complications, including disabilities.

**The percentage of pre-term births in B.C. was 7.1% in 2002, a slight increase from 6.8% in 2001. British Columbia's rate has been consistently lower than the national average over the last five years.**



Source: Canadian Vital Statistics – Birth Database (Statistics Canada).

Statistics Canada, Births, 1998, Cat. No. 84F0210XPB, p. 12

Statistics Canada, Births, 1999, Cat. No. 84F0210XPB, p. 12

Statistics Canada, Births, 2000, Cat. No. 84F0210XPB, p. 12

Statistics Canada, Births, 2001, Cat. No. 84F0210XPB, p. 12

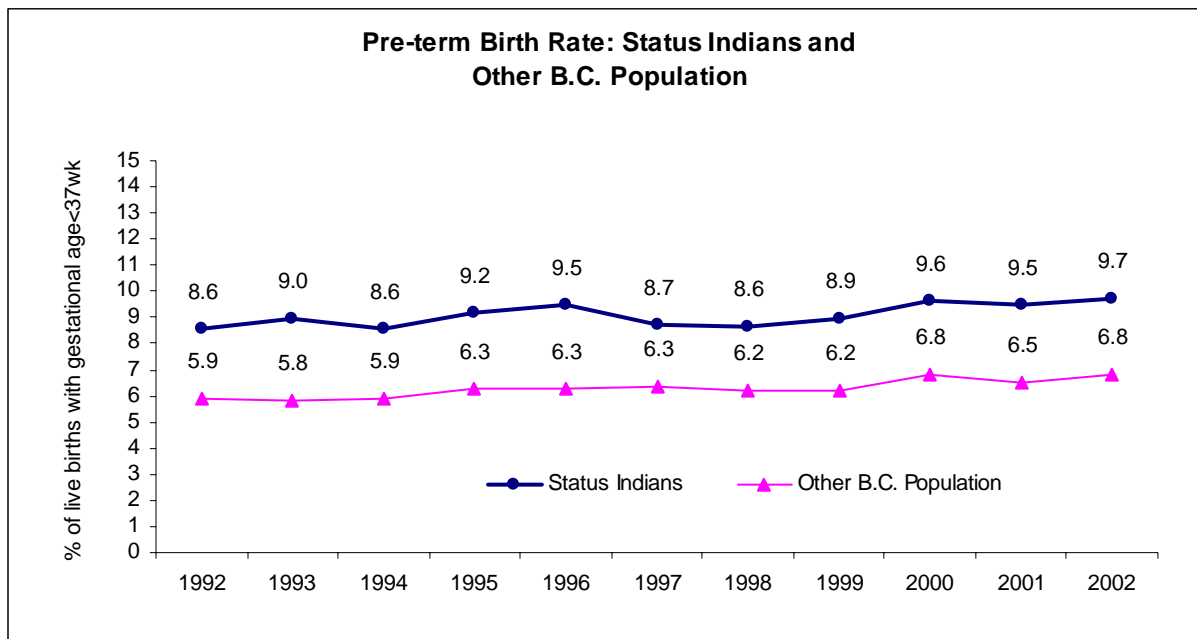
Statistics Canada, Births, 2002, Cat. No. 84F0210, p. 27

Caveats: data excluded births with unknown gestational age, gestational age less than 20 weeks, and births to non-Canadian residents.

## b) Pre-term Birth: Status Indians and Other British Columbians

Over the last 10 years, the Status Indian pre-term birth rate has been consistently higher than the rate for other British Columbians.

In 2002, the Status Indian pre-term birth rate continued to increase to 9.7%, higher than the 6.8% for other British Columbians.



Source: British Columbia Vital Statistics Agency, "Regional Analysis of Health Statistics for Status Indians in British Columbia, 1992-2002", pp. 94 and 95.

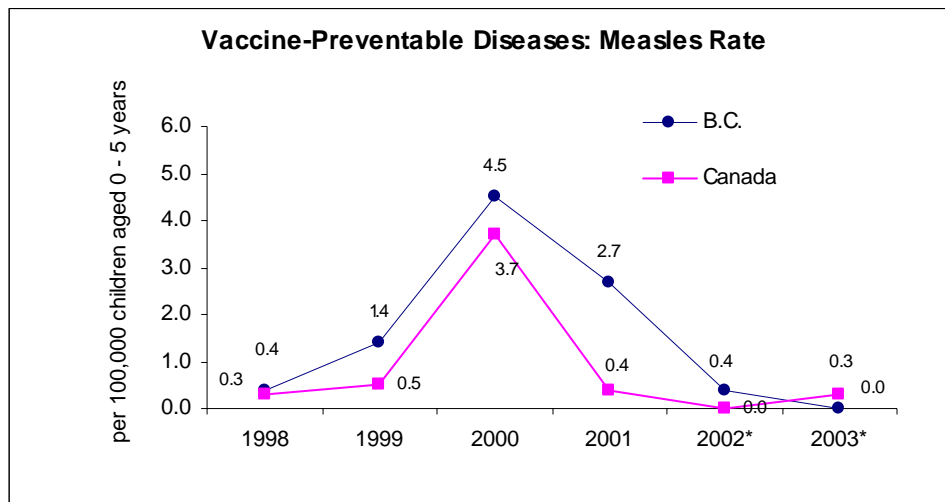
### 1.3 Vaccine-Preventable Disease<sup>4</sup>

Proper and effective immunizations protect children from a host of debilitating and sometimes deadly childhood diseases.

#### a) Measles

The reported incidence rate for measles is defined as the number of new cases reported by year, per 100,000, for children aged 5 years and younger.

**The rate of new cases of measles in B.C. children aged 0 – 5 years dropped from 2.7 to 0.0 per 100,000 from 2001 to 2003, a significant improvement from 4.5 in 2000. The national average was 0.3 in 2003.**



Source: Immunization and Respiratory Infections Division, Centre for Infectious Disease Prevention & Control, Public Health Agency of Canada and BC Centre for Disease Control.

\*While this estimate meets Statistics Canada's quality standards, there is a high level of error associated with it.

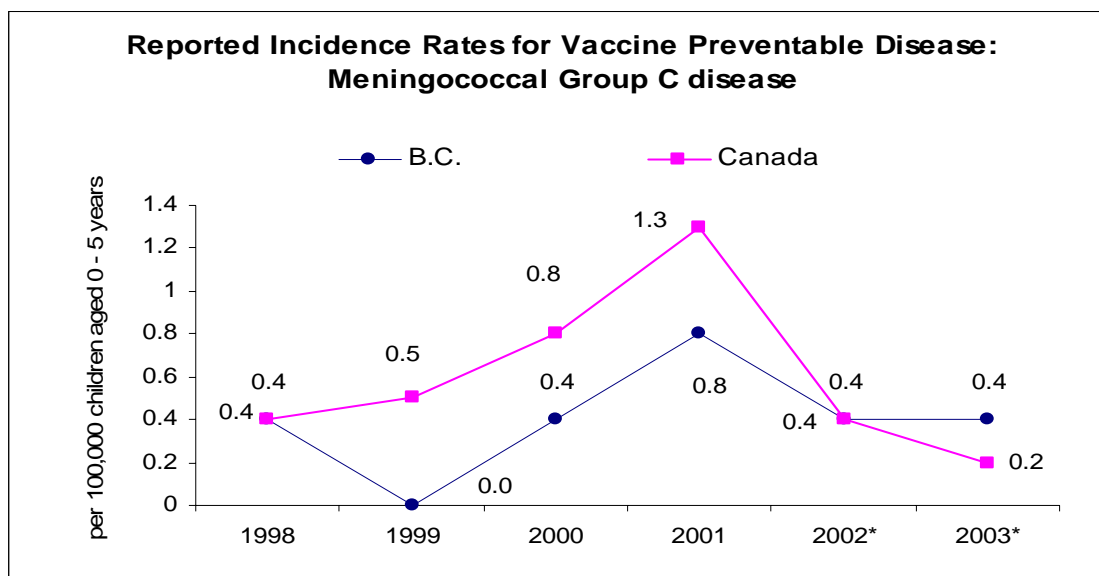
<sup>4</sup> Data for vaccine preventable disease – Meningococcal Group C disease, Measles and Haemophilus Influenzae-type disease (Hib) for 2002 and 2003 are provisional and subject to change.



## b) Meningococcal Group C

The invasive meningococcal disease (serogroup C) incidence rate is defined as number of new cases reported by year, per 100,000, for children 5 years of age and younger.

The rate of new cases of invasive meningococcal disease (serogroup C) in B.C. for children aged 0 – 5 years decreased to 0.4 per 100,000 in 2003, from 0.8 per 100,000 in 2001. The national average was 0.2 per 100,000 in 2003.



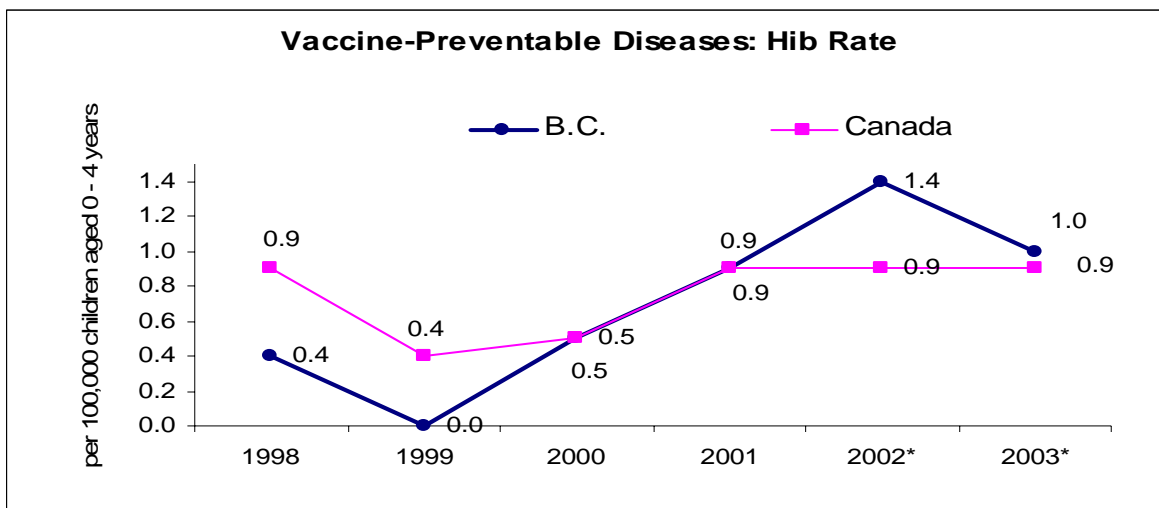
Source: Immunization and Respiratory Infections Division, Centre for Infectious Disease Prevention & Control, Public Health Agency of Canada and BC Centre for Disease Control.

\*While this estimate meets Statistics Canada's quality standards, there is a high level of error associated with it.

### c) Infant Haemophilus Influenzae – Type B

The reported incidence rate for Haemophilus Influenzae – Type B disease (Hib) rate is defined as the number of new cases reported annually, per 100,000 for children aged 0 – 4 years.

The rate of new cases of Haemophilus Influenzae – Type B disease (Hib) in B.C. for children aged 0 – 4 was 1.0 per 100,000 in 2003. The national rate was 0.9 in 2003.



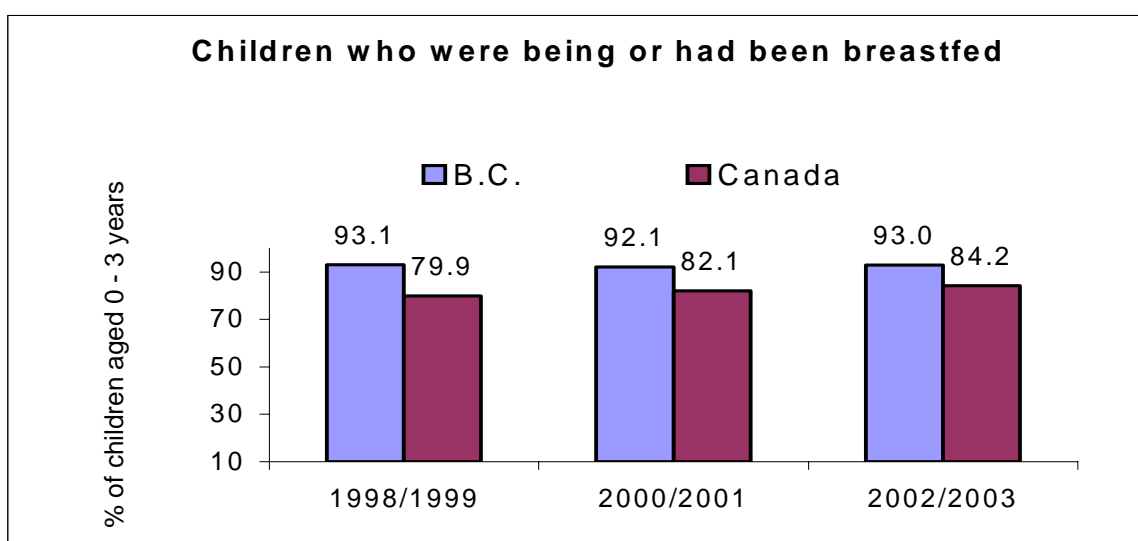
Source: Immunization and Respiratory Infections Division, Centre for Infectious Disease Prevention & Control, Public Health Agency of Canada and BC Centre for Disease Control.

\*While this estimate meets Statistics Canada's quality standards, there is a high level of error associated with it.

## 1.4 Prevalence of Breastfeeding

Breastfeeding is linked to prevention of health problems in children because it provides the essential nutrients for healthy growth and promotes resistance to infections and prevention of allergies.

**In 2002/2003, the proportion of children aged 0 – 3 years who were being breastfed or had been breastfed was 93.0%, higher than the national average of 84.2%.**



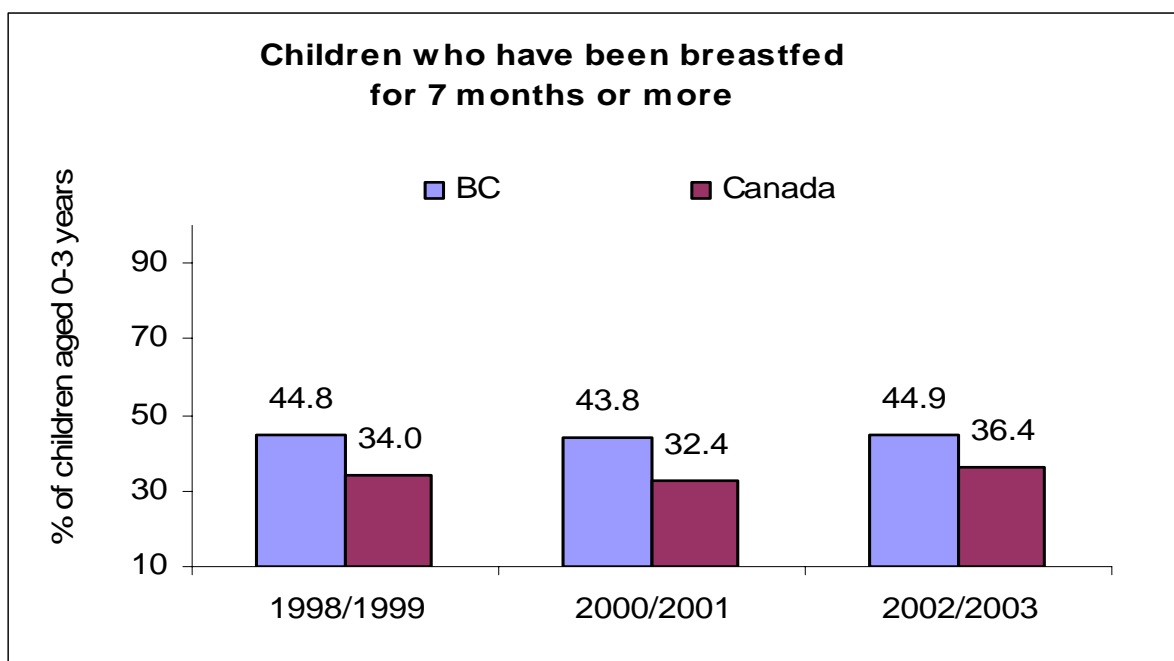
Source: National Longitudinal Survey of Children and Youth, Master File (Statistics Canada), Cycle 3 (1998/99), Cycle 4-v2 (2000-2001), Cycle 5 (2002-2003) Child Questionnaire.

Caveats: data excluded children living in the Territories, children living on reserve and children living in institutions.

## 1.5 Duration of Breastfeeding

This indicator is defined as the length of time children 0 - 3 years of age were breastfed. Duration is only asked of the person most knowledgeable (PMK) for children who were breastfed but are no longer being breastfed. This indicator does not include children currently being breastfed.

**In 2002/2003, 44.9% of children were breastfed for seven months or more, higher than the national average of 36.4%.**



Source: National Longitudinal Survey of Children and Youth, Master File (Statistics Canada), Cycle 3 (1998/99), Cycle 4-v2 (2000-2001), Cycle 5 (2002-2003) Child Questionnaire.

Caveats: data excluded children living in the Territories, children living on reserve, and children living in institutions.

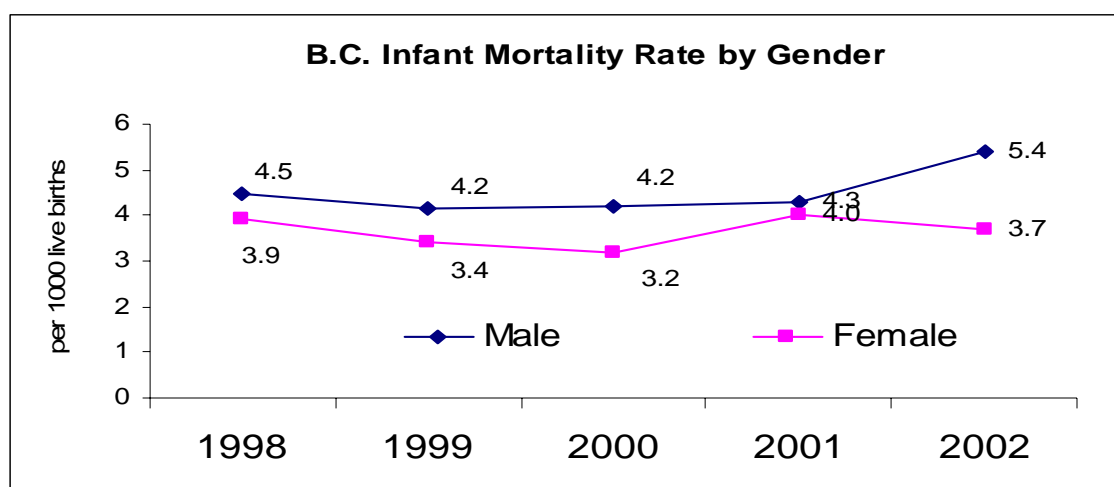
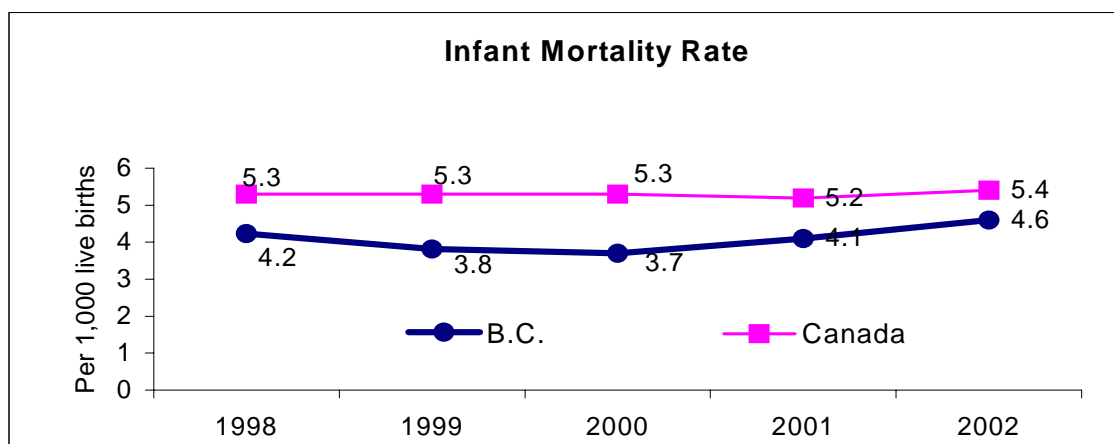
## 1.6 Infant Mortality

### a) Infant mortality rates of British Columbia and Canada

Infant mortality is a fundamental measure of child health and the well-being of a society. It reflects not only the level of mortality, but also the health status and health care of a population, the effectiveness of preventative care and the attention paid to maternal and child health. The infant mortality rate is the number of infants who die in the first year of life per 1,000 live births.

**The mortality rate for B.C. infants in 2002 was 4.6 per 1,000 live births, slightly higher than 4.1 in 2001 and lower than the national average of 5.4.**

**The mortality rate for B.C. female infants in 2002 was 3.7 per 1,000 live births, lower than 5.4 for B.C. male infants.**



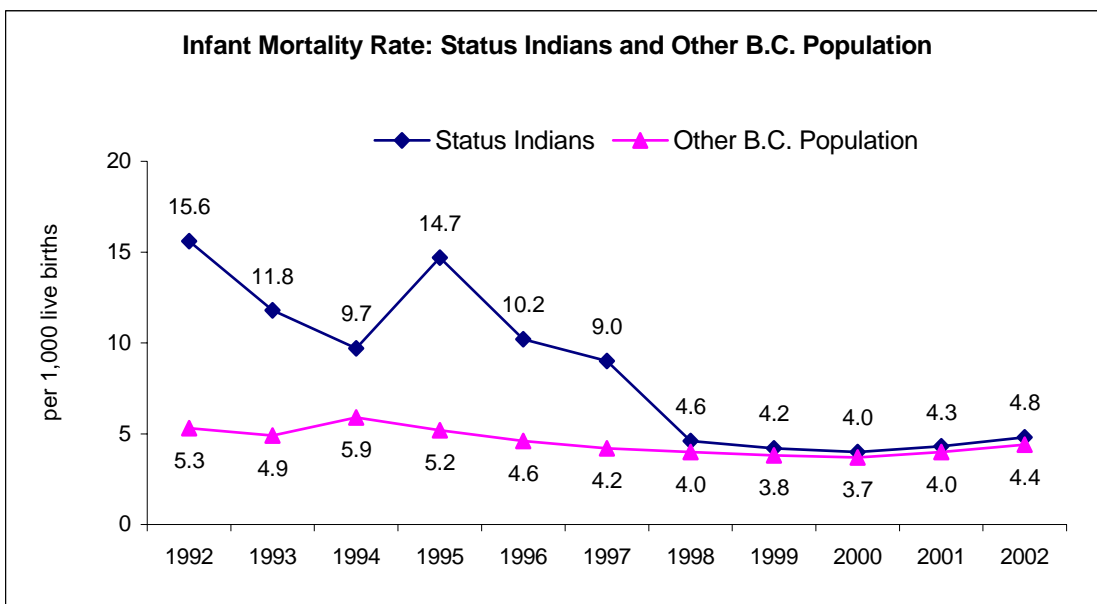
Source: Statistics Canada, Canadian Vital Statistics, Birth and Death Databases and Demography Division, Table 102-0504, Deaths, by age group and sex, Canada, provinces and territories, annual.  
Caveats: data excluded births to non-Canadian residents.

## b) Infant Mortality Rate of Status Indians and Other British Columbians

The infant mortality rate is defined as the number of infants who die in the first year of life per 1,000 live births.

Between 1992 and 2002, the infant mortality rate for Status Indians dropped more than threefold, from 15.6 to 4.8 per 1,000 live births. This decrease was greater than that experienced by the rest of the B.C. population in the same period.

**Between 2001 and 2002, there was a slight increase in the Status Indian infant mortality rate from 4.3 to 4.8 per 1,000 live births.**



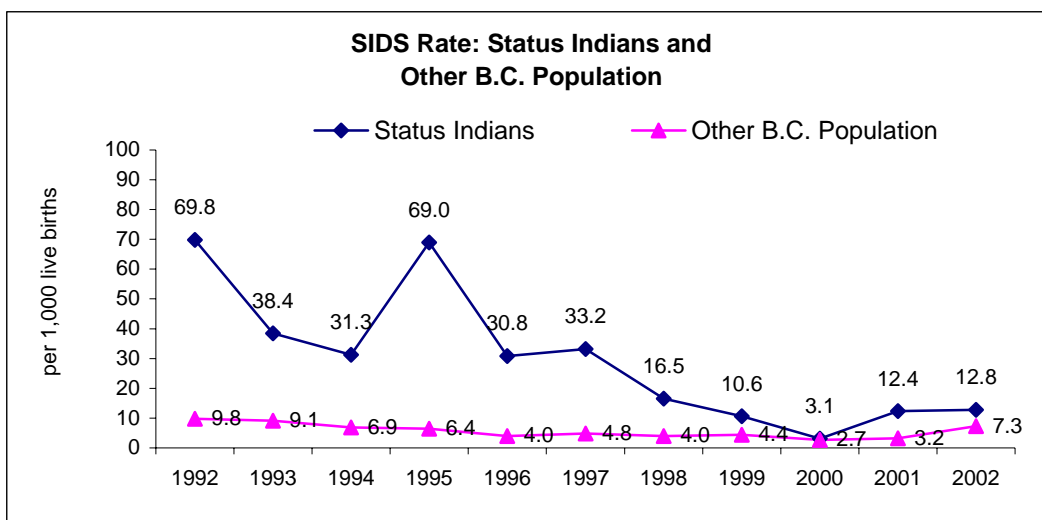
Source: British Columbia Vital Statistics Agency, "Regional Analysis of Health Statistics for Status Indians in British Columbia, 1992-2002", pp. 94 and 95.

### c) Sudden Infant Death Syndrome (SIDS): Status Indians and Other British Columbians

SIDS is the sudden and unexpected death of an apparently healthy infant less than one year of age, which remains unexplained after all known and possible causes have been ruled out through autopsy and investigation.

**Between 1992 and 2002, the SIDS rate for Status Indians dropped from 69.8 to 12.8 per 1,000 live births. That decrease was greater than that experienced by the rest of the B.C. population in the same period.**

**SIDS among the Status Indian population increased from 12.4 in 2001 to 12.8 per 1,000 live births in 2002. Among other British Columbians, the rate of SIDS also increased from 3.2 in 2001 to 7.3 in 2002 per 1,000 live births.**



Source: Regional Analysis of Health Statistics for Status Indians in British Columbia 1992-2002, B.C. Vital Statistics Agency.

## **2.0 Safety and Security**

Unintentional injuries and falls are the leading causes of death and injury for children and youth, and both are almost entirely preventable. The injury mortality rate and injury hospitalization rate are measures of the risk to children's health and well-being. They are also measures of the adequacy of a broad range of public health and accident prevention strategies, such as public education, product development and prevention and treatment resources. Injury is also a major cause of long and short term impairment and disability for Canadians.

The injury mortality rate and injury hospitalization rate are based on data on injuries cause by motor vehicle traffic crashes, falls, assaults, other unintentional accidents and self-inflicted injuries.

### **2.1 Injury mortality**

Data for 2001/2002 – 2002/2003 are not available at this time.

#### **b) Unintentional death injuries per 100,000 for under 5 year-olds**

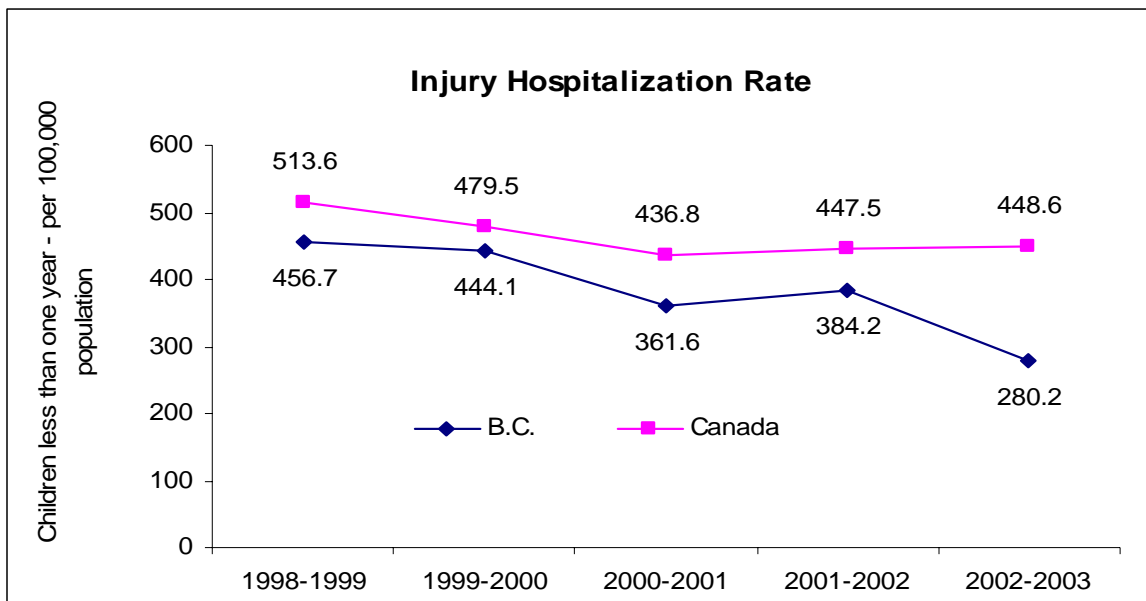
Data for 2001/2002 – 2002/2003 are not available at this time.



## 2.2 Injury hospitalization

The injury hospitalization rate is defined as the proportion of children aged less than 1 year who are hospitalized for treatment of injuries resulted from all external causes. The injury hospitalization rate is a measure of the risks to children's health and well-being, and also a measure of the adequacy of a broad range of public health and accident prevention strategies, including public education, product development and use, community and road design and prevention and treatment resources.

**In 2002/2003, B.C.'s injury hospitalization rate (per 100,000 aged less than 1 year) decreased to 280.2 from 384.2 in 2001/2002. Canada's injury hospitalization rate was 448.6 per 100,000 in 2002/2003.**



Source: Canadian Institute for Health Information (CIHI) – hospital records.

Caveats: data excluded newborns. Outpatients and emergency department visits are also excluded.

### 3.0 Early Childhood Development

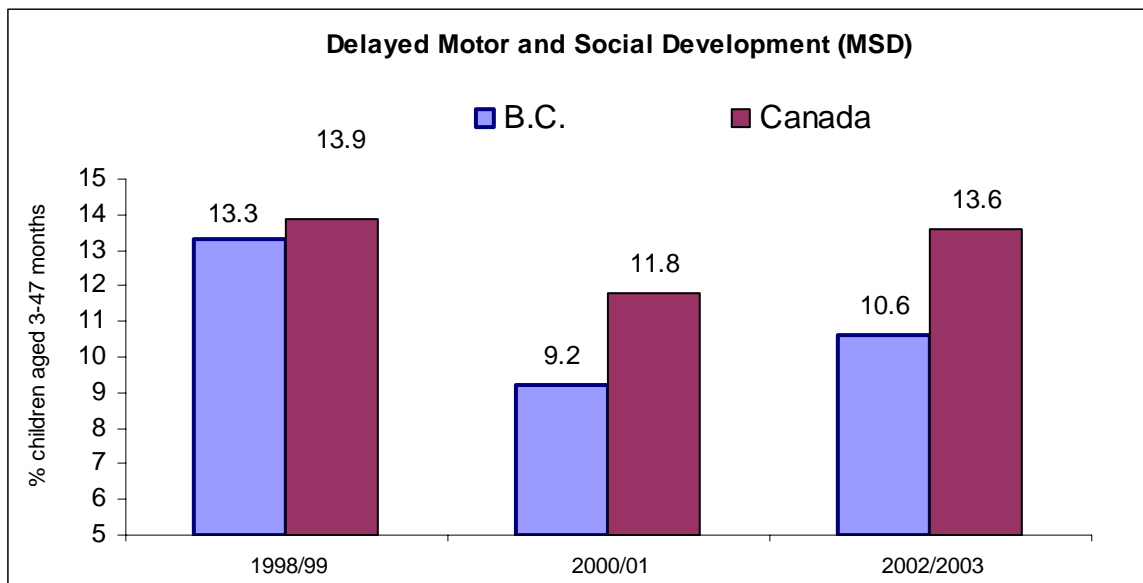
Children need a safe and stimulating environment in order to succeed in school and become happy and well-adjusted citizens. The physical, behavioral and psychological health of children in the early years is important for healthy development. Early childhood development (ECD) refers to the period of a child's growth that takes place from the moment of conception until the child is six years old.

#### 3.1 Physical Health and Motor Development

The motor and social development<sup>5</sup> indicator is defined as the proportion of children aged 3 – 47 months who have delayed motor and social development.

##### a) Delayed Motor and Social Development Skills

**In 2002/2003, 10.6% of B.C. children aged 3 – 47 months were reported by their parents as having delayed motor and social development skills. The national average was 13.6% in 2002/2003.**



Source: National Longitudinal Survey of Children and Youth, Master File (Statistics Canada), Cycle 3 (1998/99), Cycle 4 -v2 (2000-2001), and Cycle 5 (2002-2003) Child Questionnaire.

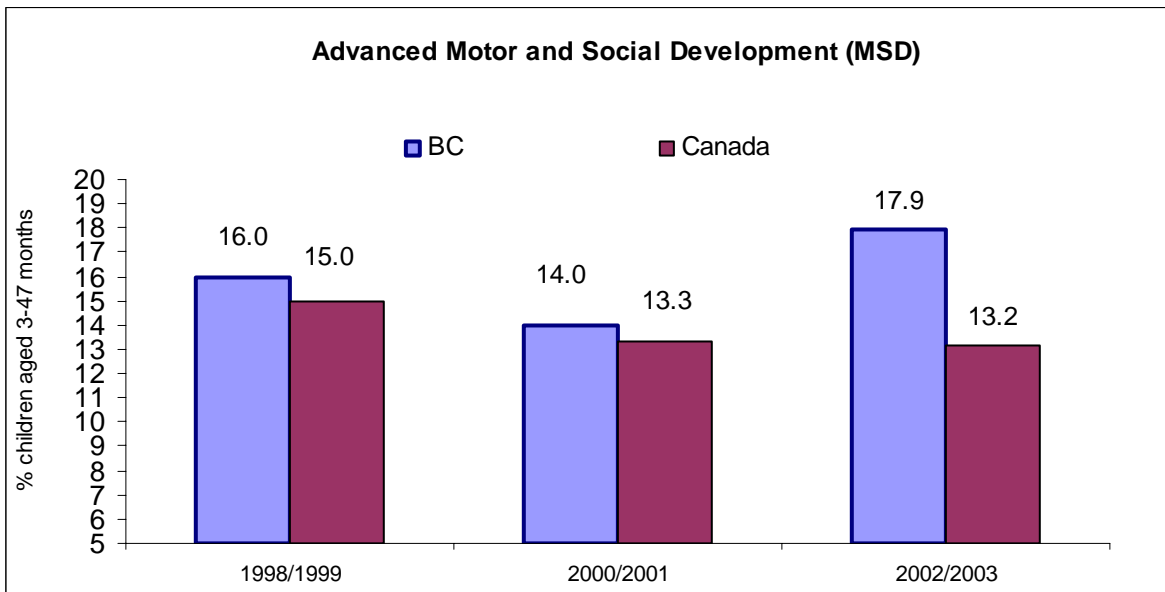
Caveats: data excluded children living in the Territories, children living on reserve and children living in institutions.

<sup>5</sup> The NLSCY motor and social development indicator is based on a set of 15 age-sensitive questions that measure the motor and social development of young children from birth through three years of age. These questions are answered by the person most knowledgeable about the child, and therefore reflect a parental assessment of the child's motor and social development skills, not a professional diagnosis. The results are rolled into a standardized scale that takes account of the child's age and allows for comparisons of scores to be made across age groups.

## b) Advanced Motor and Social Development Skills

The motor and social development indicator is defined as the proportion of children aged 3 – 47 months who have advanced motor and social development.

**In 2002/2003, 17.9% of B.C. children aged 3 – 47 months were reported by their parents as having advanced motor and social development skills, higher than 14% in 2000/01. The national average was 13.2% in 2002/2003.**



Source: National Longitudinal Survey of Children and Youth, Master File (Statistics Canada), Cycle 3 (1998/99), Cycle 4 -v2 (2000-2001), and Cycle 5 (2002-2003) Child Questionnaire.

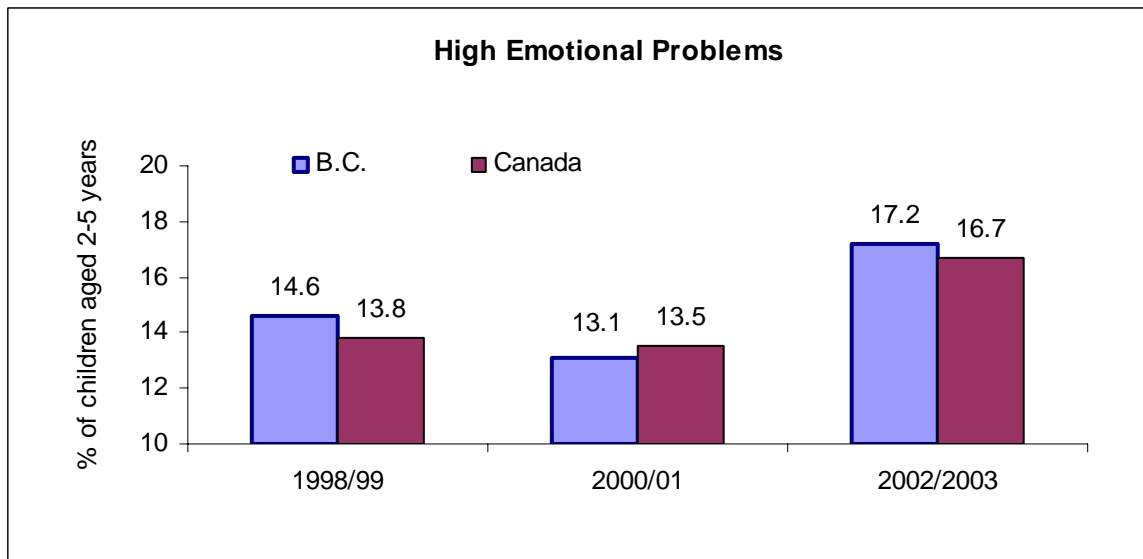
Caveats: data excluded children living in the Territories, children living on reserve and children living in institutions.

### 3.2 Emotional Health and Social Development

a) The *Emotional Problem-Anxiety Score* is the proportion of children aged 2 – 5 years who exhibit high levels of emotional and/or anxiety problems.

**From 1998 – 2003, the proportion of B.C. children displaying high levels of emotional problems increased.**

**In 2002/2003, 17.2% of children aged 2 – 5 exhibited high emotional scores, while the national average was 16.7% in 2002 – 7 2003.**

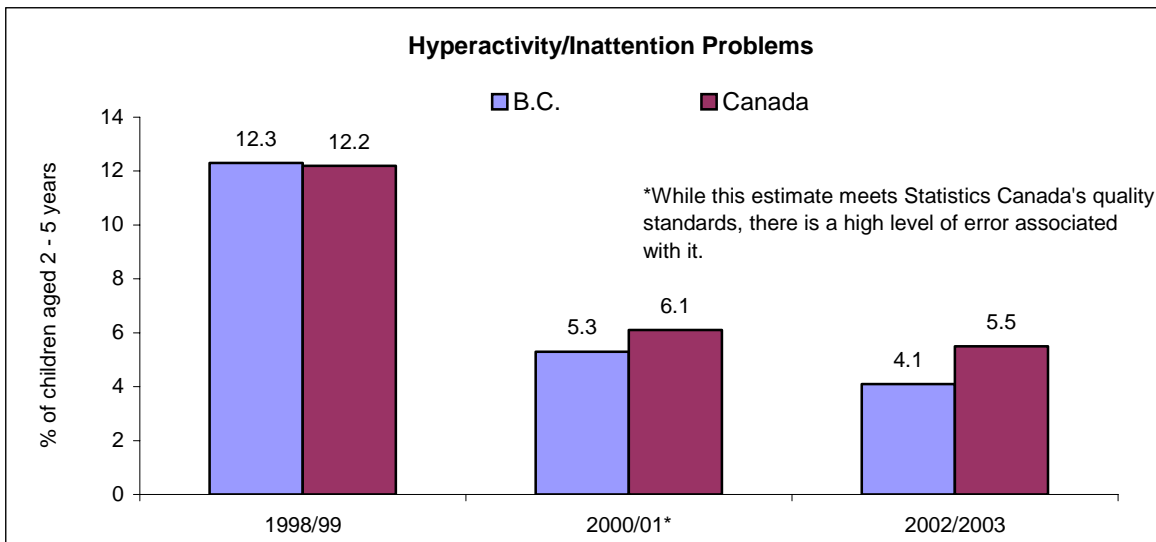


Source: National Longitudinal Survey of Children and Youth, Master File (Statistics Canada), Cycle 3 (1998/99), Cycle 4-v2 (2000-2001), and Cycle 5 (2002-2003), Child Questionnaire.

Caveats: data excluded children aged 0 - 1 years, children living in the Territories, children living on reserve, and children living in institutions.

b) The *Hyperactivity-Inattention Score* is the proportion of children aged 2 – 5 years who exhibit high levels of hyperactivity and/or inattention.

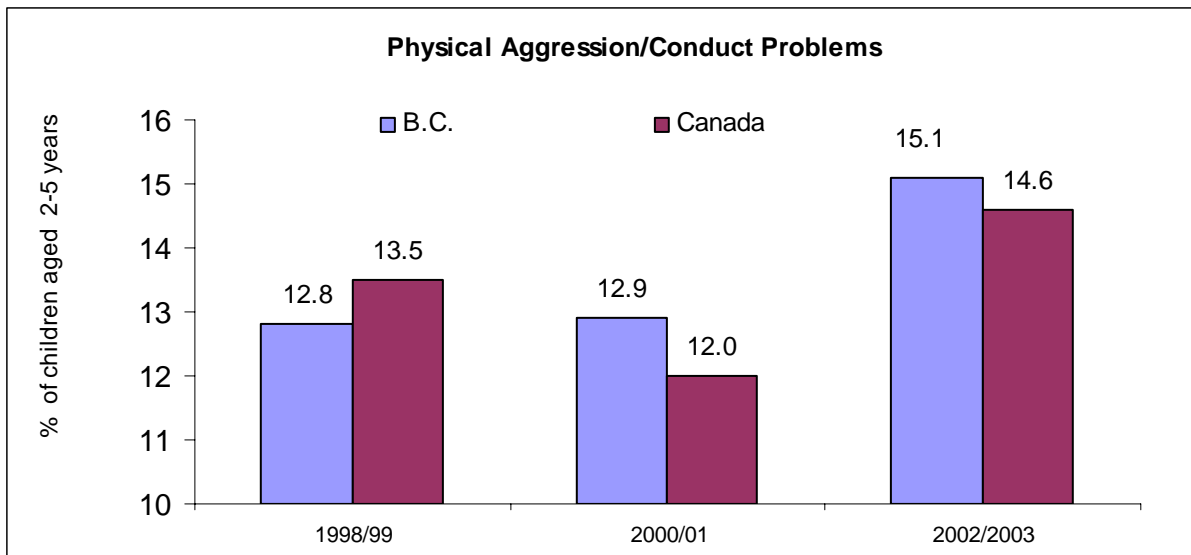
**In 2002/2003, 4.1% of B.C. children aged 2 – 5 were reported by their parents as having exhibited high levels of hyperactivity and/or inattention, lower than the national average of 5.5% in 2002/2003.**



Source: National Longitudinal Survey of Children and Youth, Master File (Statistics Canada), Cycle 3 (1998/99), Cycle 4-v2 (2000-2001), and Cycle 5 (2002-2003), Child Questionnaire.  
Caveats: data excluded children aged 0 - 1 years, children living in the Territories, children living on reserve, and children living in institutions.

c) The *Physical Aggression Score* is the proportion of children aged 2 – 5 years who exhibit high levels of physical aggression, opposition and/or conduct disorder.

**In 2002/2003, 15.1% of B.C. children aged 2 – 5 years were reported by their parents as having exhibited high levels of physical aggression, opposition, and/or conduct disorder, higher than the national average of 14.6% in 2002/2003.**

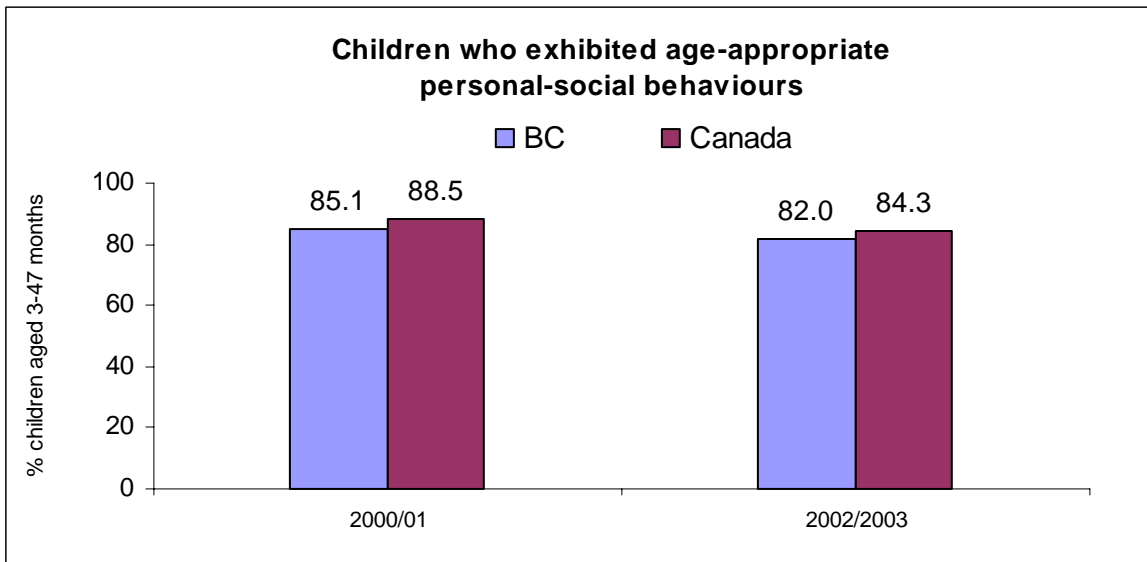


Source: National Longitudinal Survey of Children and Youth, Master File (Statistics Canada), Cycle 3 (1998/99), Cycle 4-v2 (2000-2001), and Cycle 5 (2002-2003), Child Questionnaire.

Caveats: data excluded children aged zero-one year, children living in the Territories, children living on reserve, and children living in institutions.

d) *The Ages and Stages* reports the proportion of children aged 3 – 47 months who do not exhibit appropriate personal-social behaviours.

**In 2002/2003, 82.0% of children aged 3 – 47 months exhibited age-appropriate personal-social behaviours, lower than 85.1% in 2000/2001. The national average was 84.3% in 2002/2003.**



Source: National Longitudinal Survey of Children and Youth, Master File (Statistics Canada), Cycle 4-v2 (2000/01), Cycle 5 (2002-2003) Child Questionnaire.

Caveats: data excluded children living in the Territories, children living on reserve, children living in institutions. While this estimate meets Statistics Canada's quality standards, there is a high level of error associated with it.

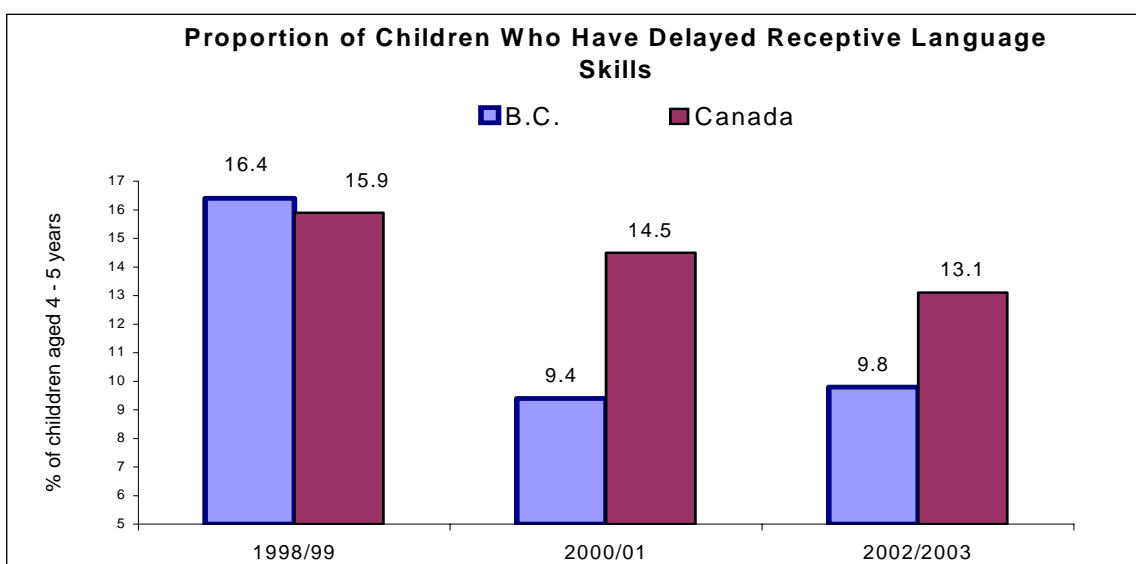
### 3.3 Language Skills

Developing language skills, such as putting words into sentences, learning vocabulary and using proper pronunciation, are important for ‘school readiness’ and communicating with others.

This indicator is based on the Peabody Picture Vocabulary Test – Revised (PPVT-R), which assesses a child's receptive or hearing vocabulary. This indicator reflects the proportion of children aged 4 – 5 years, who have delayed, average and advanced levels of receptive vocabulary.

#### a) Delayed Receptive Language Skills

**In 2002/2003, 9.8% of B.C. children aged 4 – 5 years were scored as “delayed” on the PPVT-R. This represents an improvement from 16.4% in 1998/1999 and is lower than the 2002/2003 national average of 13.1%.**



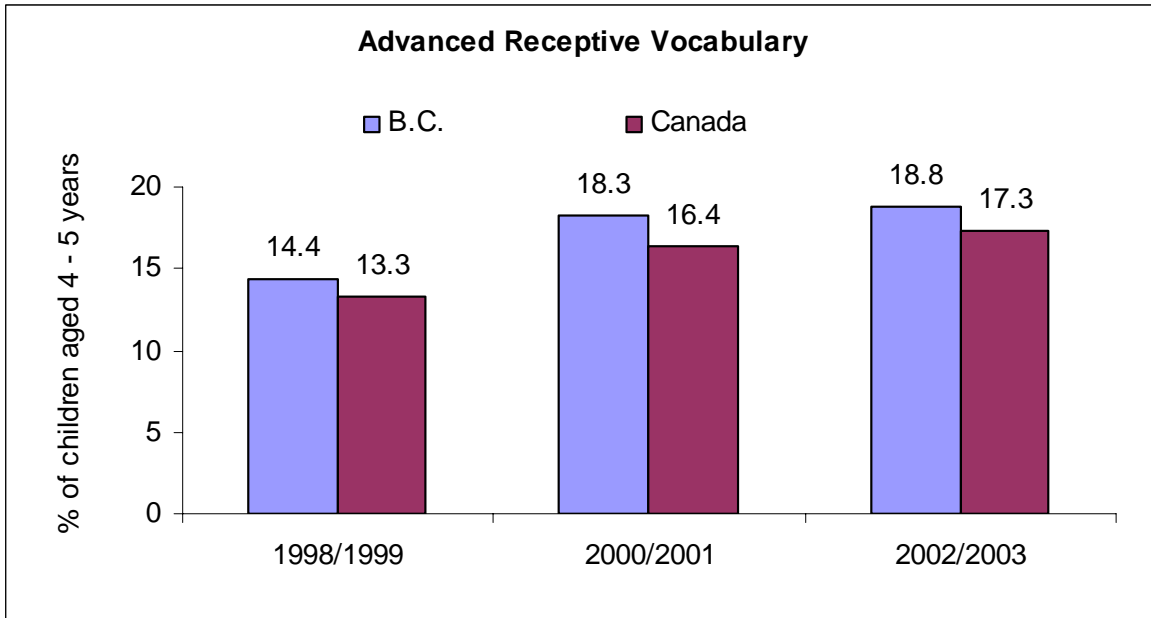
Source: National Longitudinal Survey of Children and Youth, Master File (Statistics Canada), Cycle 3 (1998/99), Cycle 4-v2 (2000-2001), Cycle 5 (2002-2003) Child Questionnaire.

Caveats: data excluded children aged 0 – 3 years, children aged 4 – 5 years for whom the person most knowledgeable (PMK) did not provide consent for the PPVT-R to be administered, children living in the Territories, children living on reserve, and children living in institutions.



## b) Advanced Receptive Language Skills

In 2002/2003, 18.8% of B.C. children aged 4 – 5 years received “advanced” scores on the Peabody Picture Vocabulary Test – Revised. This represents an improvement from the 14.4% in 1998/1999 and is higher than the 2002/2003 national average of 17.3%.



Source: National Longitudinal Survey of Children and Youth, Master File (Statistics Canada), Cycle 3 (1998/99), Cycle 4-v2 (2000-2001), Cycle 5 (2002-2003) Child Questionnaire.

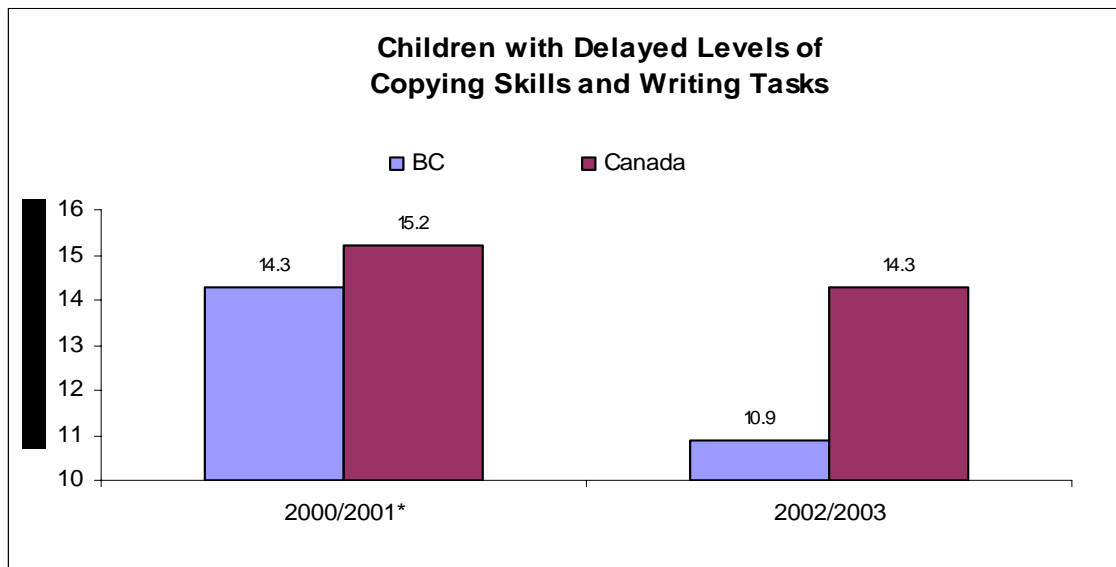
Caveats: data excluded children aged 0 – 3 years, children aged 4 – 5 years for whom the person most knowledgeable (PMK) did not provide consent for the PPVT-R to be administered, children living in the Territories, children living on reserve, and children living in institutions.

### c) Levels of Copying Skills and Writing Tasks

This indicator is defined as the proportion of children aged 4 – 5 years who display delayed, average and advanced levels of copying skills and writing tasks, as measured by *Who Am I?*

The *Who am I?* instrument assesses the ability to conceptualize and reconstruct a geometrical shape (copying skill), and the ability to use symbolic representations (writing task) such as numbers, letters and words. This instrument assesses nonverbal language and can be used to assess children whose knowledge of English or French is limited.

**In 2002/2003, 10.9% of B.C. children aged 4 – 5 years displayed delayed levels of copying skills and writing tasks. This represents an improvement from the 14.3% in 2000/2001. The 2002/2003 national average was 14.3%.**



Source: National Longitudinal Survey of Children and Youth, Master File (Statistics Canada), Cycle 4-v2 (2000/01), Cycle 5 (2002-2003) Child Questionnaire.

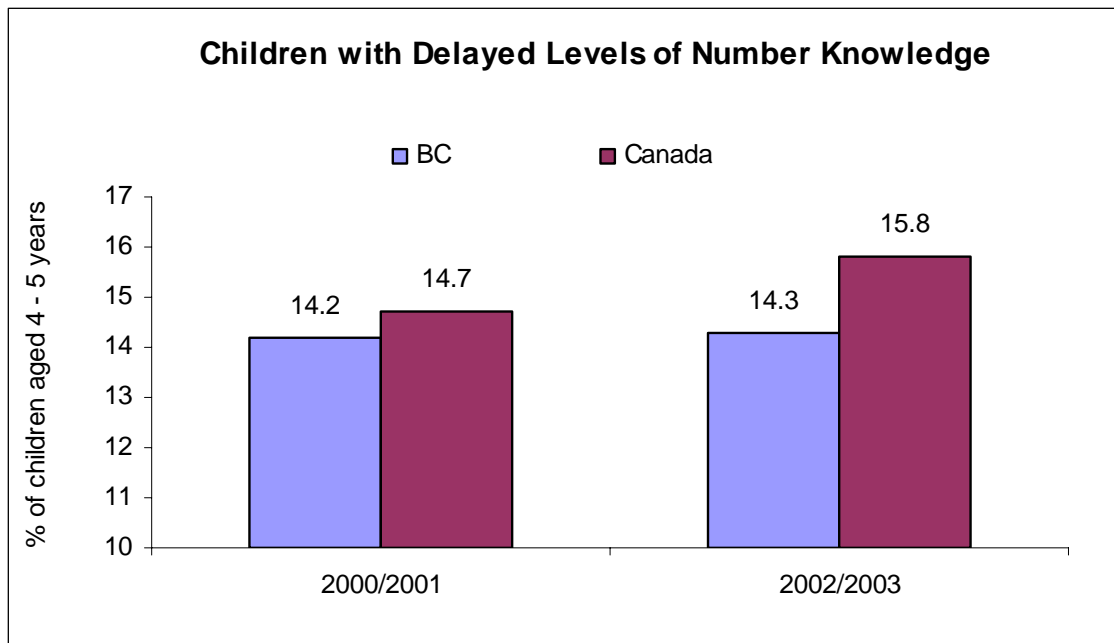
\*Caveats: data excluded children aged 0 - 3 years, children living in the Territories, children living on reserve, children living in institutions, and children who do not understand English or French.

### 3.4 Number Knowledge Levels

This indicator is defined as the proportion of children aged 4 – 5 years who display delayed levels of intuitive knowledge of numbers, as measured by the *Number Knowledge Test*.

The *Number Knowledge Test* assesses children’s intuitive knowledge of numbers by assessing their understanding of the system of whole numbers. Children who exhibit this intuitive knowledge tend to fare better in school mathematics. Four developmental levels have been established for children’s understanding of numbers – predimensional (level 0), unidimensional (level 1), bidimensional (level 2) and integrated bidimensional (level 3). Knowledge at each level of the test is a prerequisite, or provides the conceptual building block, for knowledge at the next level of the test.

**In 2002/2003, 14.3% of B.C. children aged 4 – 5 years displayed ‘delayed’ levels of number knowledge. This is virtually unchanged since 2000/2001. The national average was 15.8% in 2002/2003.**



Source: National Longitudinal Survey of Children and Youth, Master File (Statistics Canada), Cycle 4-v2 (2000/01), Cycle 5 (2002-2003) Child Questionnaire.

\*Caveats: data excluded children aged 0 – 3 years, children living in the Territories, children living on reserve, children living in institutions, and children who do not understand English or French.

## 4.0 Family-Related Indicators

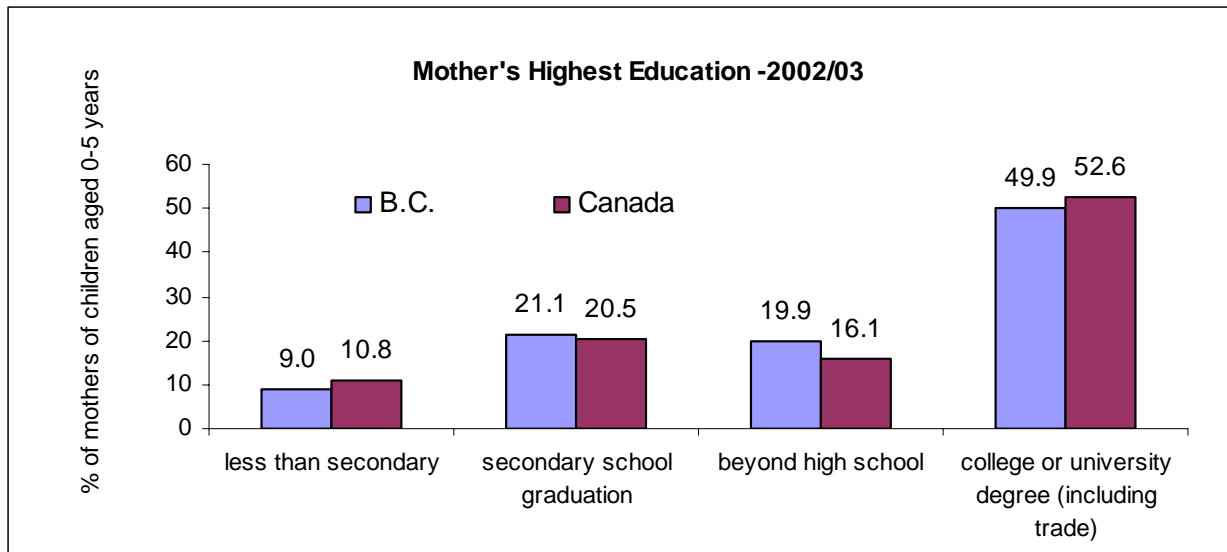
### 4.1 Parental Education

Parental educational attainment plays an important role in shaping the development of children. Recent research has demonstrated a strong link between maternal education and levels of vocabulary development in children.

The *Mother's Highest Level of Education* measure is the highest level of education attained by the mother of children aged 0 – 5 years.

#### a) Mother's Highest Education Level

**In 2002/2003, 49.9% of B.C mothers (with children aged 0 – 5) had a university degree or college credential (including trades), lower than the national average of 52.6%.**



Source: National Longitudinal Survey of Children and Youth, Master File (Statistics Canada), Cycle 3 (1998/99), Cycle 4-v2 (2000-2001), and Cycle 5 (2002-2003) Child Questionnaire.

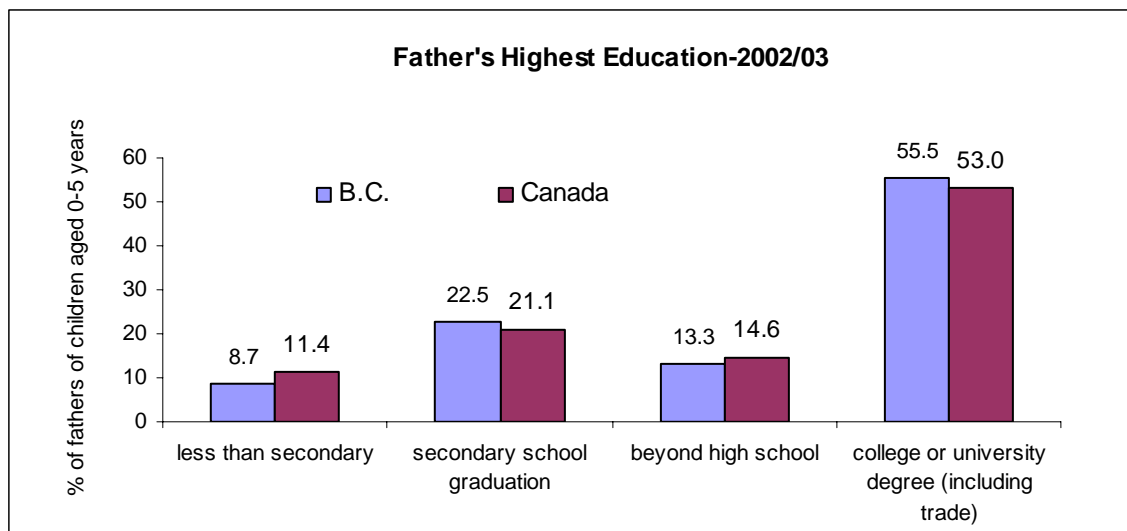
Caveats: data excluded children whose persons most knowledgeable (or spouse of the person most knowledgeable) is not a biological, step, adoptive or foster mother, children living in the Territories, children living on reserve, and children living in institutions.

## b) Father's Highest Education Level

The *Father's Highest Level of Education* measure is the highest level of education attained by the father of children aged 0 – 5 years.

**In 2002/2003, 8.7% of B.C. fathers had less than secondary school education, lower than the national average of 11.4%.**

**In 2002/2003, 55.5% of B.C. fathers had a university degree or college credential (including trades), higher than the national average of 53.0%.**



Source: National Longitudinal Survey of Children and Youth, Master File (Statistics Canada), Cycle 3 (1998/99), Cycle 4-v2(2000-2001), and Cycle 5 (2002-2003) Child Questionnaire.

Caveats: data excluded children whose person most knowledgeable (or spouse of the person most knowledgeable) is not a biological, step, adoptive or foster mother, children living in the Territories, children living on reserve, and children living in institutions.

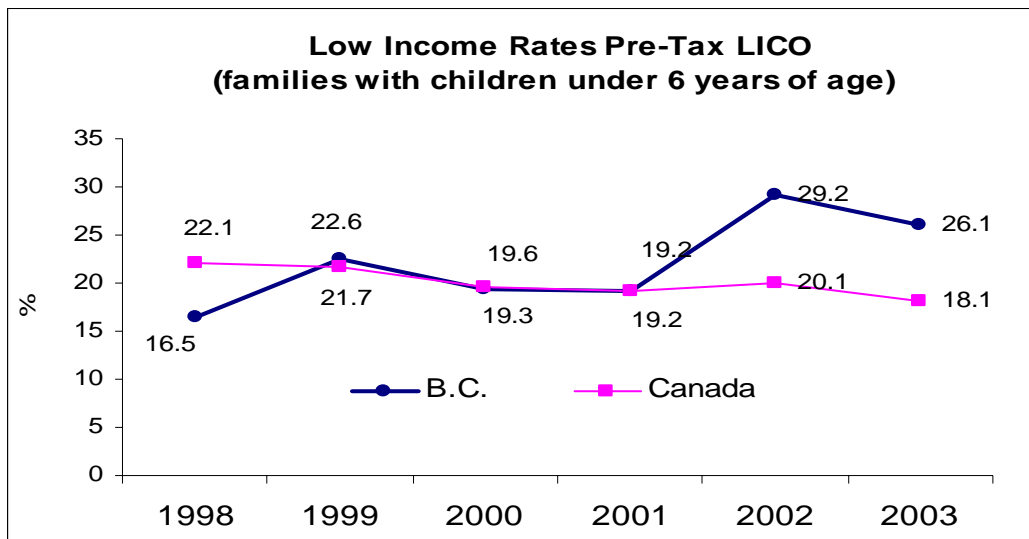
## 4.2 Level of Income<sup>6</sup>

Low income is associated with health and social problems in children. Low-income families face challenges in securing adequate and safe shelter, nutritional food, adequate clothing and other necessary supplies. The Low-Income Cut-Off (LICO) is a national measure of poverty for a household of four people (two adults and two children) in a large urban area (500,000 or more people). The threshold for LICO is adjusted from year to year.

### a) Pre-tax Low-Income Cut-Off

The pre-tax LICO is the proportion of children under age six years living below the poverty level before income tax.

**In 2003, 26.1% of B.C. children under age six years were living below the pre-tax LICO, a decreased from 29.2% in 2002. The national average was 18.1% in 2003.**



Source: Survey of Labour and Income Dynamics (SLID) – Statistics Canada, Reference Years 1998, 1999, 2000, 2001, 2002, and 2003.

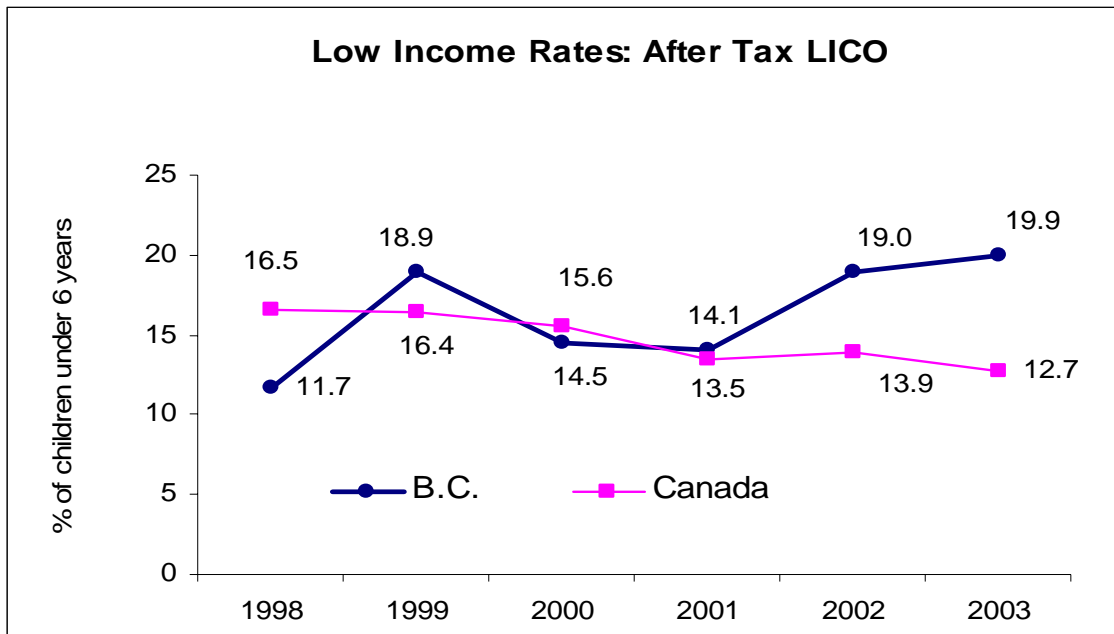
Caveats: data excluded children living in the Territories.

<sup>6</sup> 2003 Historical Revision – The release of the 2003 LICO Before and After tax data is accompanied by a historical revision for 1990 to 2002 due to an update of the survey weights in both the Survey of Labour and Income Dynamics (SLID) and the Survey of Consumer Finances (SCF). The weighted data now take into account new population projections based on the 2001 Census of Population, and valuable information on the overall distribution of wages and salaries – a major component of income-in Canada.

## b) Post-tax Low-Income Cut-Off (LICO)

The post-tax LICO is the proportion of children under age six living below the poverty level after income tax. This measure recognizes the change in purchasing power after income tax for low to middle-low income levels.

**B.C.'s post-tax LICO rate increased from 19.0% in 2002 to 19.9% in 2003. Meanwhile, the national post-tax LICO rate decreased from 13.9% in 2002 to 12.7% in 2003.**



Source: Survey of Labour and Income Dynamics (SLID) – Statistics Canada, Reference Years 1998, 1999, 2000, 2001, 2002, and 2003.

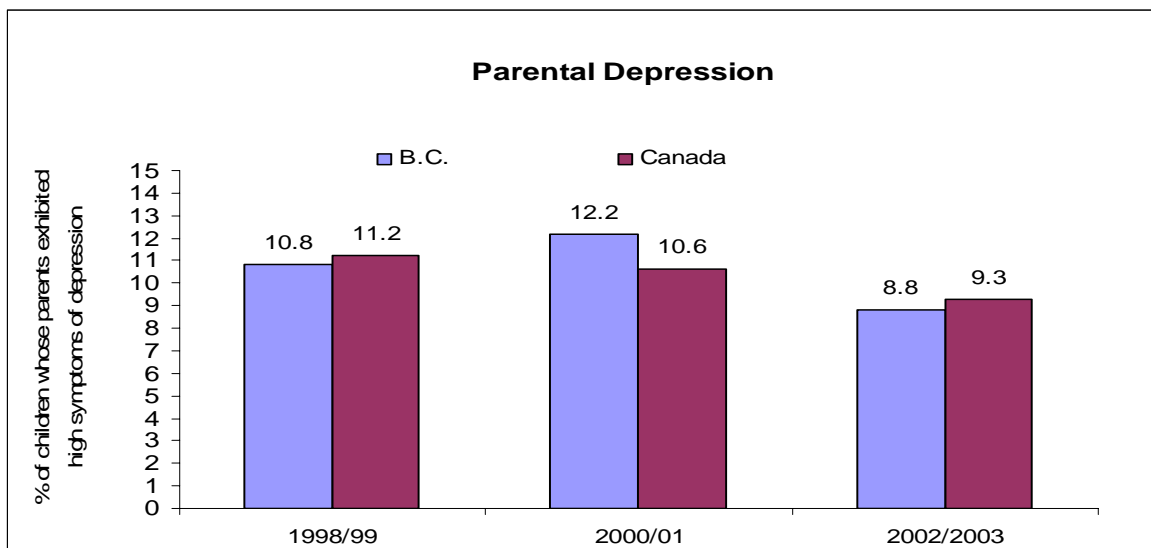
Caveats: data excluded children living in the Territories.

### 4.3 Parental Health: Parental Depression

The well-being of a parent plays a key role in how a family functions. Researchers have found that optimal health and well-being for a child are difficult to achieve if the primary caregiver is depressed – withdrawn, tired, pessimistic about the future and despondent – and therefore may not be able to give adequate stimulation and care to the child. Children raised by a depressed parent are more likely to have poor cognitive development and behaviour problems.

**The parental depression indicator is the proportion of children aged 0 – 5 years whose primary caregiver exhibits high symptoms of depression.**

**In 2002/2003, the proportion of children aged 0 – 5 whose ‘person most knowledgeable’ (PMK) exhibited high levels of depression was 8.8%, a decrease from 12.2% in 2000/2001. In Canada, the proportion of children aged 0 – 5 whose PMK exhibited high levels of depression was 9.3% in 2002/2003.**



Source: National Longitudinal Survey of Children and Youth, Master File (Statistics Canada), Cycle 3 (1998/99), Cycle 4-v2 (2000/01), Cycle 5 (2002/03) Child Questionnaire.

Caveats: data excluded children living in the Territories, children living on reserve and children living in institutions.

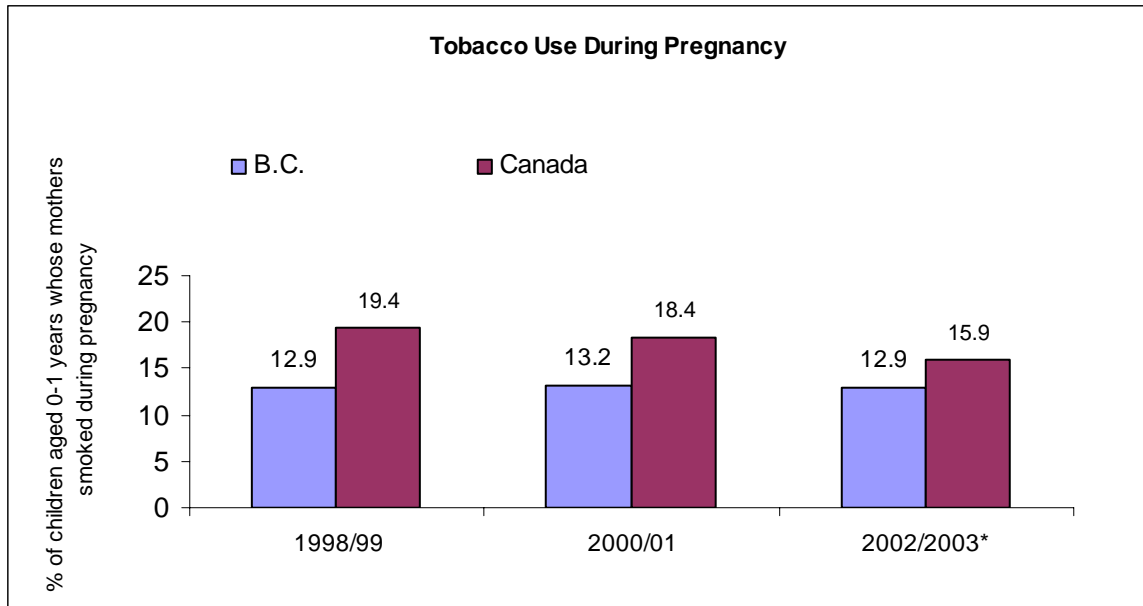


#### 4.4 Parental Health: Tobacco Use During Pregnancy

Research shows that smoking during pregnancy leads to higher rates of perinatal complications and illnesses. Children of mothers who smoked during pregnancy are also more likely to have learning problems, ear infections and breathing problems, hyperactivity, lower scores in reading and spelling and delays in developing math skills.

**This indicator shows the proportion of children aged 0 – 1 years whose mothers smoked during pregnancy.**

**In 2002/2003, 12.9% of B.C. children’s mothers smoked during pregnancy, a decrease from 13.2% in 2000/2001. At the national level, 15.9% of Canadian mothers smoked during pregnancy in 2002/2003.**



Source: National Longitudinal Survey of Children and Youth, Master File (Statistics Canada), Cycle 3 (1998/99), Cycle 4-v2 (2000/01), Cycle 5 (2002/03) Child Questionnaire.

Caveats: data excluded children living in the Territories, children living on reserve and children living in institutions.

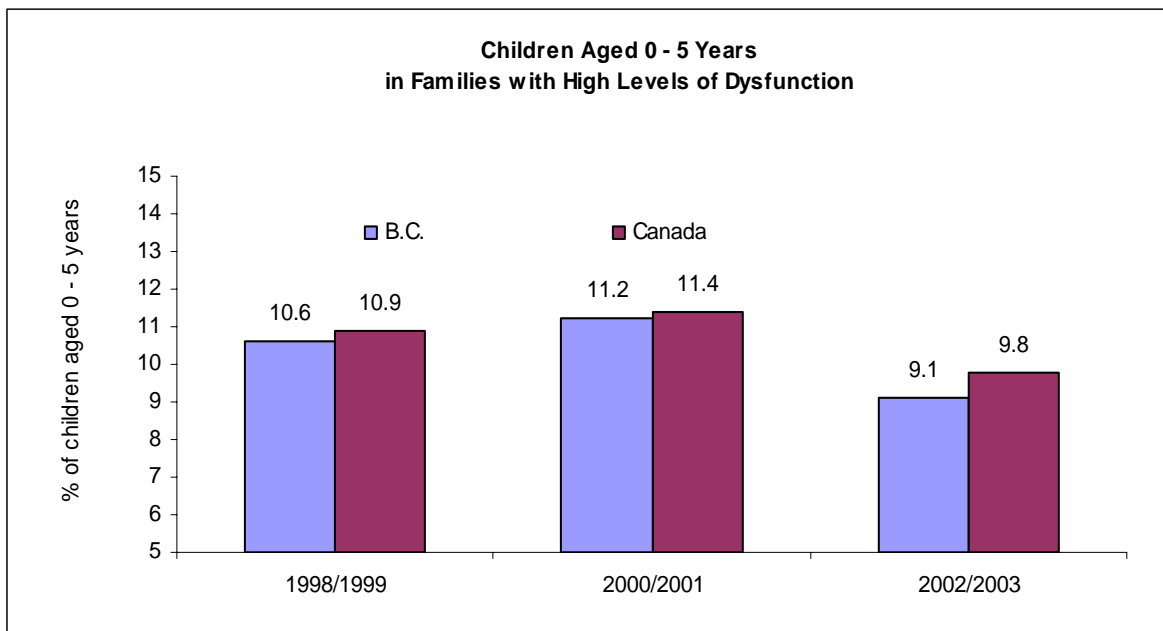
\*While this estimate meets Statistics Canada’s quality standards, there is a high level of error associated with it.

## 4.5 Family Functioning

The quality of the family environment has major effects on the health and well-being of children. Current research indicates that children from dysfunctional families have more relationship problems than those from healthy families and have an increased likelihood of childhood behavioural and emotional problems, such as aggression and anxiety.

The family function indicator is the proportion of children aged 0 – 5 years in families with high levels of dysfunction, which includes problem solving, communication, roles, affective involvement, affective responsiveness and behaviour control.

**In 2002/2003, 9.1% of children aged 0 – 5 years were living in families with high levels of dysfunction, down from 11.2% in 2000/2001. At the national level, 9.8% of children aged 0 – 5 years were living in families with high levels of dysfunction in 2002/2003.**



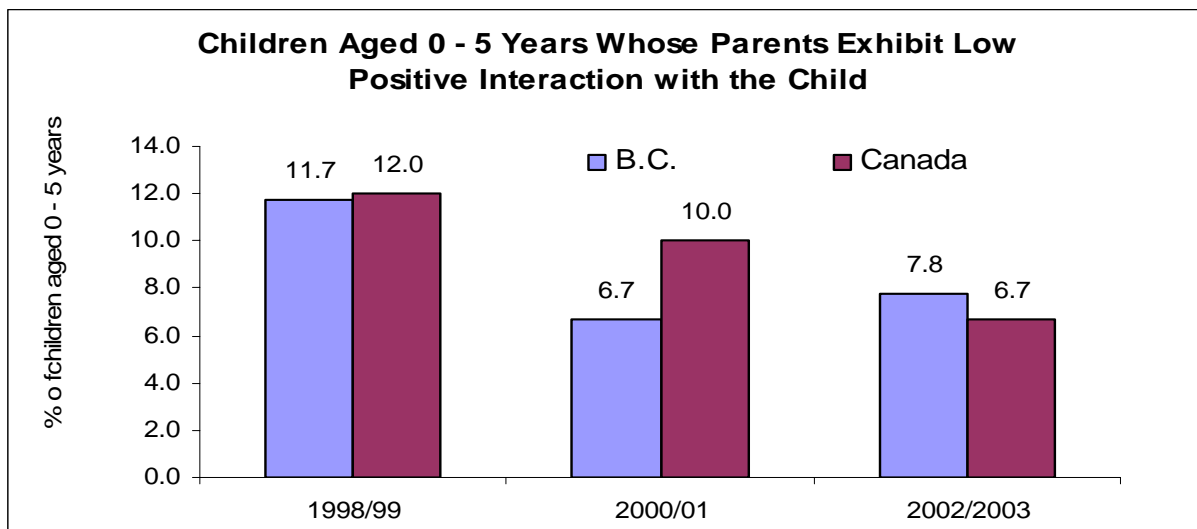
Source: National Longitudinal Survey of Children and Youth, Master File (Statistics Canada), Cycle 3 (1998/99), Cycle 4-v2 (2000/01), Cycle 5 (2002/03) Child Questionnaire  
Caveats: data excluded children living in the Territories, children living on reserve and children living in institutions.

## 4.6 Positive Parenting

Research in Canada has consistently shown that parenting practices influence a range of childhood outcomes, such as aggressive behaviour, pro-social behaviour, academic achievement and high school completion.

The positive interaction indicator shows the proportion of children aged 0 – 5 years whose parents exhibited low levels of positive interaction with the child.

**The B.C. rate of children whose parents exhibited low positive interaction rose above the national average in 2002/2003 to 7.8%. The national average was 6.7% in 2002/2003.**



Source: National Longitudinal Survey of Children and Youth, Master File (Statistics Canada), Cycle 3 (1998/99), Cycle 4-v2 (2000/01), and Cycle 5 (2002/03) Child Questionnaire.

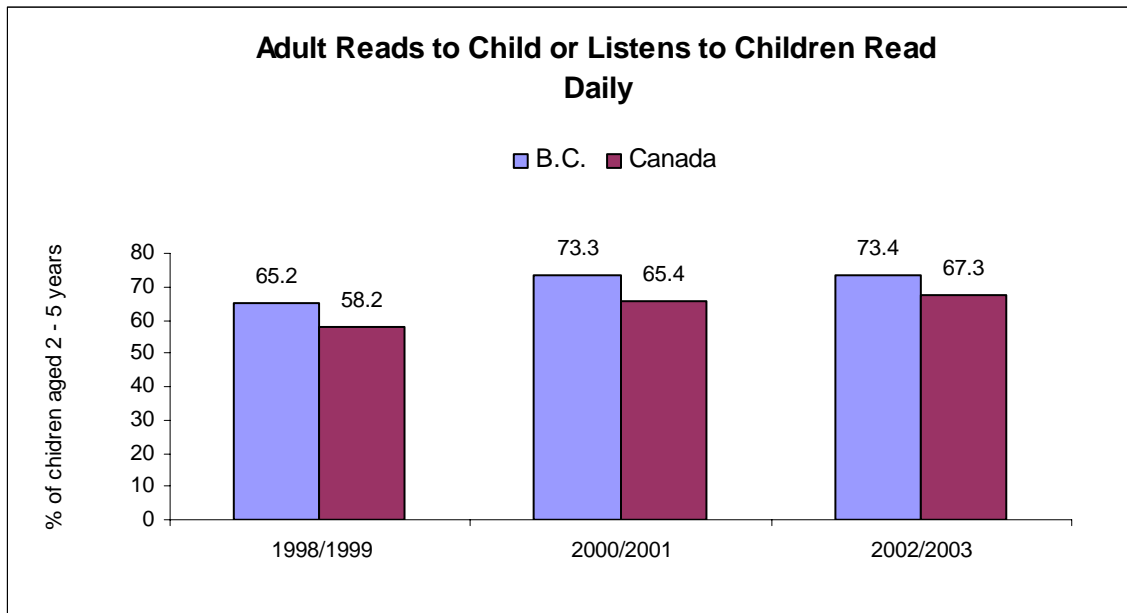
Caveats: data excluded children living in the Territories, children living on reserve, children living in institutions.

## 4.7 Reading by an Adult

Reading to children is an excellent way to develop language, reading, writing and social interaction skills. Children who are read to several times a day are typically more prepared for entering school, and score higher on the Peabody Picture Vocabulary Test – Revised, than those who are read to less often. This indicator shows the distribution of children ages 2 – 5 in 1998/1999, while data for 2000/2001 and 2002/2003 are for ages 0 – 5 years, by how often an adult reads to the child or listens to the child read.

### a) Adult Reads to Child or Listens to Child Read Daily

Between 2002/2003, 73.4% of B.C. children aged 0 – 5 years had an adult read to them, or an adult listened to the child read daily, which remained relatively unchanged from 2000/2001. In 2002/2003 the national average was 67.3%.



Source: National Longitudinal Survey of Children and Youth, Master File (Statistics Canada), Cycle 3 (1998/99), Cycle 4-v2 (2000/01), and Cycle 5 (2002/03) Child Questionnaire.

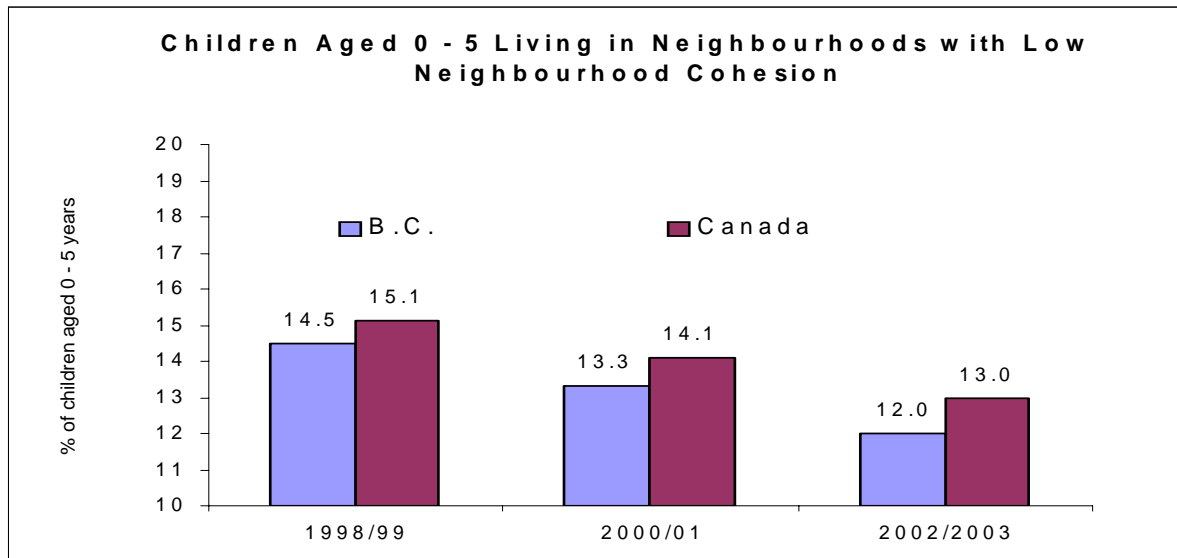
Caveats: data excluded children living in the Territories, children living on reserve, children living in institutions.

## 5.0 Community-Related Indicators

### 5.1 Neighbourhood Cohesion and Safety

a) *Neighbourhood cohesion* reflects the primary caregiver's perception of his/her neighbours and the extent to which there is a sense of support among neighbours. For example, low neighbourhood cohesion indicates the proportion of children aged 0 – 5 years living in neighbourhoods with a low level of support among neighbours, as perceived by the primary caregiver.

**In 2002/2003, 12.0% of B.C. parents indicated that their children lived in neighbourhoods defined as having low levels of cohesion – a slight improvement from 13.3% in 2000/2001. The 2002/2003 national average was 13.0%.**

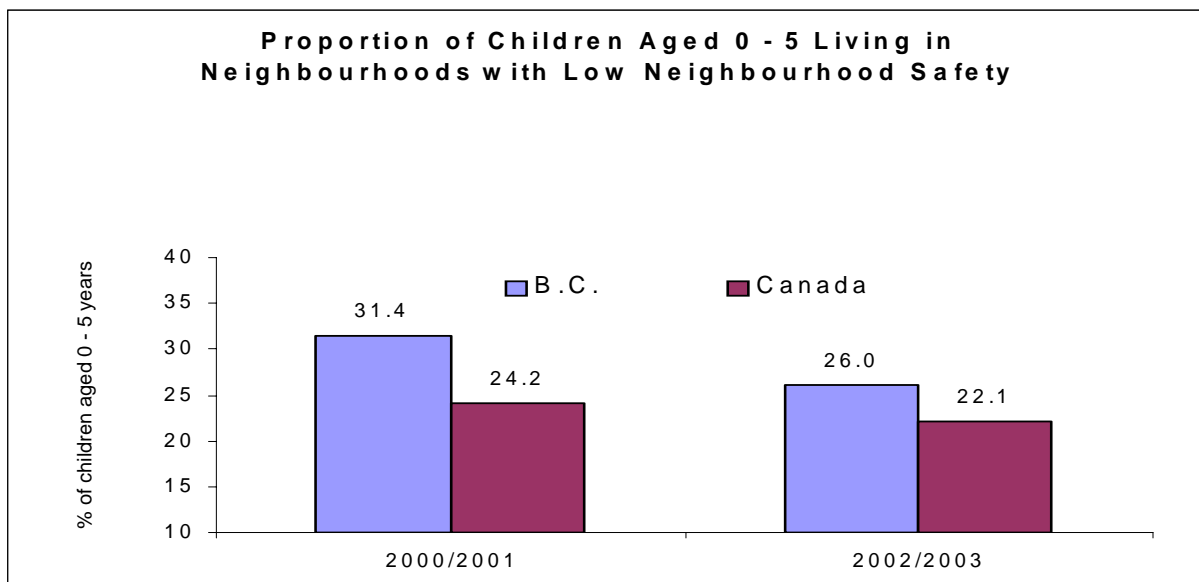


Source: National Longitudinal Survey of Children and Youth, Master File (Statistics Canada), Cycle 3 (1998/99), Cycle 4-v2 (2000/01), Cycle 5 (2002/03) Child Questionnaire.

Caveats: data excluded children living in the Territories, children living on reserve and children living in institutions.

b) *Neighbourhood Safety* reflects the primary caregiver's perception of their neighbourhood and the extent to which there is a sense of safety in the neighbourhood. Low neighbourhood safety indicates the proportion of children aged 0 – 5 years living in neighbourhoods where there is a low degree of safety associated with such activities as walking alone after dark and children playing outside, as perceived by the primary caregiver.

**In 2002/2003, 26.0% of B.C. parents indicated that their children lived in a neighbourhood where there is a low degree of safety, a decrease from 31.4% in 2000/2001. The national average was 22.1% in 2002/2003.**



Source: National Longitudinal Survey of Children and Youth, Master File (Statistics Canada), Cycle 3 (1998/99), Cycle 4-v2 (2000/01), Cycle 5 (2002/03) Child Questionnaire.

Caveats: data excluded children living in the Territories, children living on reserve and children living in institutions.

## 6.0 Early Development Instrument (EDI) Results

The primary focus of the EDI is to provide information on school readiness based on five early childhood development indicators. The EDI maps ([www.earlylearning.ubc.ca](http://www.earlylearning.ubc.ca)) display the proportion of vulnerable children on each scale of the EDI, according to the 59 geographic school districts across the Province. Approximately 25% of B.C. children are considered vulnerable in terms of school readiness.

### Physical Health & Well Being

- The overall range of B.C. children vulnerable in their physical development is from 4.5% to 35.1%.

### Social Competence

- The range of vulnerability for social competence is slightly narrower than for physical health; from 4.5% to 21.1%.

### Emotional Maturity

- The range of children vulnerable for emotional maturity is from 4.2% to 18.9% in B.C.

### Language & Cognitive Development

- The range of children vulnerable for language and cognitive development is from 2.5% to 24.6% vulnerable across the Province.

### Communication & General Knowledge

- The range for communication skills and general knowledge vulnerability is quite wide, from a low of 0.4% to a high of 32.4% for B.C. children.

### Vulnerable in any Category

- This measure shows the proportion of children who were vulnerable on one or more scales of the EDI. This is a 'holistic' measure of early childhood development. The range of children vulnerable in any category is from 13.4% to 54.1% across B.C.

### Range of Vulnerability in British Columbia

EDI Scale	Low Vulnerability	High Vulnerability
Physical Health & Well-Being	4.5%	35.1%
Social Competence	4.5%	21.1%
Emotional Maturity	4.2%	18.9%
Language & Cognitive Development	2.5%	24.6%
Communication & General Knowledge	0.4%	32.4%
Vulnerable in any Category	13.4%	54.1%

Source: Human Early Learning Partnership: [http://ecdportal.help.ubc.ca/pubMaps/ProvNew/sd\\_edi\\_Baseline00-05.pdf](http://ecdportal.help.ubc.ca/pubMaps/ProvNew/sd_edi_Baseline00-05.pdf).

## 7.0 Moving Forward

In general, British Columbia's children are doing as well as, or better than, their national counterparts. There are many early childhood development initiatives in British Columbia, aimed at helping children and families make the most of the early years.

For further information about Early Childhood Development programs and services in British Columbia, refer to the 2003/2004 and 2004/2005 Early Childhood Development (ECD) and Early Learning and Child Care (ELCC) Annual Reports found on the Ministry of Children and Family Development Web site: [http://www.mcf.gov.bc.ca/early\\_childhood/index.htm](http://www.mcf.gov.bc.ca/early_childhood/index.htm).

The fourth report of *Indicators of Early Childhood Health & Well-Being in British Columbia* is scheduled for release in Fall 2007.