



Dear Honourable Wade MacLauchlan,

The health and well-being of our PEI children is of utmost importance. The early years in childhood are key to having a positive influence on a child's future. We need to first start with understanding how PEI children are doing now.

The 2017 Prince Edward Island Children's Report explores the relationship between the social determinants of health, health equity, healthy behaviours and health outcomes for Island children. Risk factors to healthy child development, cognitive development and the social environment are considered as well. The Report establishes a baseline of key indicators of child health and well-being in PEI, and calls us to take action for our PEI children. Government, agencies, schools, communities, parents and families will all have a role to play in working together to support optimal child health and well-being in PEI. Investing in our children is investing not only in their future but also in the future for all Islanders.

Respectfully,

A handwritten signature in black ink, appearing to be 'H Morrison', with a long horizontal line extending to the right.

Dr. Heather Morrison
Chief Public Health Officer, PEI

ACKNOWLEDGEMENT

The Chief Public Health Office gratefully acknowledges the advice and collaboration of the following departments and agencies in the development of this report:

Education, Early Learning and Culture

Family and Human Services

Health PEI

Justice and Public Safety

Mi'kmaq Confederacy of PEI

Printed by Document Publishing Centre, Charlottetown, PEI

Available on the Prince Edward Island

Department of Health and Wellness website:

www.princeedwardisland.ca/en/topic/health-and-wellness

PREFACE

In the fall of 2015, Premier Wade MacLauchlan announced in the Legislative Assembly of Prince Edward Island that the Chief Public Health Officer would develop a report and make recommendations on the health and well-being of Prince Edward Island children.

In this report, a child is defined as an individual 0 to 18 years of age. The measurement of child health and well-being is complex and thus it is challenging to have a comprehensive set of national indicators to compare across provinces and territories. The initial work in the development of this report involved a review of national and international indicators of child health and well-being to inform the selection of indicators based on PEI's context, data availability, and feasibility.

The data required for the selected indicators are collected by and/or managed in several government departments and agencies including Education and Early Learning (EEL), Family and Human Services (FHS), Health PEI (HPEI), and Justice and Public Safety (JPS). An advisory committee, with senior management representatives from these organizations, advised on the selection of indicators in terms of data validity, availability and feasibility. The committee also facilitated data sharing agreements to assist in the independent analysis of the selected child health and well-being indicators by the Chief Public Health Office (CPHO). Data on PEI's Indigenous children are included in the overall population number for each indicator.

EXECUTIVE SUMMARY

Child health and well-being describe the general quality of life of children. During the formative years of life, rapid development occurs in every domain. Research has shown that high levels of stress and adversity in childhood have lifelong consequences, including poor behavioural and lifestyle decision-making, low educational attainment and an increased incidence and prevalence of chronic disease. The experiences of the formative years have long term implications for the individual and for society as adulthood is formed from childhood.

When provided with positive life experiences that encourage healthy development and early support when facing challenges, children are able to reach their highest potential. Unfortunately, for many Canadian children these positive experiences and early supports for challenges are not always readily available. In the 2013 UNICEF Report Card on Child Well-Being in Rich Countries, Canada ranked in a middle position at 17th out of 29 of the world's richest countries. Canadian children who live in poverty or identify as Indigenous fare worse than the average Canadian child. Cost-benefit analyses have demonstrated the cost effectiveness of investments in early childhood environments and comprehensive early childhood programming.

SOCIAL DETERMINANTS OF HEALTH AND CHILD WELL-BEING

The health and development of individuals is shaped by an array of factors that vary by life course stage. The role of social factors in determining health outcomes is widely acknowledged, consistently affirming that social factors have a marked influence on the health of populations. Population health is driven by socio-economic factors, called the Social Determinants of Health (SDH) that shape the conditions in which we live, learn, work and play. The SDH is a term used to describe the interrelated societal conditions that

influence people's health. Genetic history, biology and environmental exposures can all have an impact on health, and form part of the complex etiology of physical and mental health problems. The SDH affect young people's development, health and well-being. Its broad areas of focus – social context, health outcomes, health behaviours and risk behaviours – encapsulate key factors that influence young people's health and well-being, opportunities and life chances.

When provided with positive life experiences that encourage healthy development and early support when facing challenges, children are able to reach their highest potential.

In addition to the SDH, the social environment also influences non-health outcomes, contributing to the overall picture of child well-being. Much of the literature in the field of crime prevention, youth violence, victimization, and addictions indicates that the major risk factors fall into five life domains: individual, family, peer, school, and community/neighbourhood. These risk factors may have minimal effects on their own, but when combined can have a strong interactive effect, and exposure to multiple risk factors over time can have a cumulative effect, resulting in additional risks to well-being.

The 2017 Prince Edward Island Children's Report explored the relationship between the SDH, health equity, health behaviors and health outcomes for Island children. In addition, risk factors in healthy child development, cognitive development and the social environment were considered. Where possible, the Material and Social Deprivation



Index and Family Affluence Scale III were used to incorporate socioeconomic factors into the analysis of health and well-being trends. Unfortunately, data limitations were encountered including legislative restrictions that prevented sharing certain record level data with the CPHO, data collected for program evaluation purposes rather than population assessment and surveillance and paper records which hindered data validation and analysis.

KEY FINDINGS

Deprivation can be defined as a state of observable and demonstrable disadvantage relative to the local community or the wider society or nation to which the individual, family or group belongs. Almost half of Island children are living in areas of the province that fall within two of the highest material and social deprivation quintiles and

almost 1 in 4 Islanders living with low income are under the age of 18.

The report's findings indicate that certain risk factors and health outcomes for Island children follow the same pattern as the general population, as reported in the 2016 Chief Public Health Officer's report *Health for All Islanders*. An unequal distribution of the SDH among population groups, in children as well as adults, is leading to differences in health outcomes. In addition, risk factors are present in other well-being domains. While these risk factors may have minimal effects on their own, when combined they can have a strong interactive effect, and exposure to multiple risk factors over time can have a cumulative effect, resulting in additional risks to well-being.

The following key findings are highlighted:

Health inequity exists within our Island children's population:

Island children with the highest material and social deprivation have higher than PEI average rates of nutrition risk and food insecurity, obesity, asthma, mental illness and acute inpatient hospitalization. Island children with low material and social deprivation show the opposite trend.

Island children with the highest material and social deprivation and lowest family affluence have greater health risk factors:

Island children with the highest deprivation and lowest family affluence receive breast milk for a shorter duration than the PEI average and have lower rates of fruit and vegetable intake. Island children with the highest privilege and family affluence show the opposite trend.

Gender is associated with differences in health risk factors and health outcomes:

Island male children have higher nutrition risk, lower rates of fruit and vegetable consumption, and higher rates of tobacco smoking, heavy drinking and cannabis use. Island male children also have higher than PEI average rates of asthma, mental illness and injury-related hospitalizations. Island female children have lower rates of daily physical activity.

Age is associated with differences in health risk factors and health outcomes:

Rates of self-reported physical activity and fruit and vegetable consumption among Island children decreased as grade level increased. Tobacco smoking, heavy drinking and cannabis use most commonly start in the early teen years. Asthma, mental illness and injury-related hospitalizations were more common in children from 12-18 years of age whereas acute inpatient hospitalization was more common for children under the age of 6.

Healthy Childhood Development and Cognitive Development:

Approximately 1 in 4 children at 18 months did not meet the Ages and Stages Questionnaire® expectations or were in the monitoring zone in at least one domain. Of the kindergarten-aged children who completed the Early Years Evaluation, 2 out of 5 did not meet the developmental milestones in at least one of the five skill areas. Difficulties in math, reading comprehension and writing were also noted in provincial education assessments.

Social Environment:

Of the parents with child protection reports, those with four or more children had a higher rate of recidivism (more than one report in the three year time span) than the PEI average rate. Recidivism was higher for parents with the highest material and social deprivation compared to parents with the lowest material and social deprivation. Of new childhood victimization referrals, approximately 3 in 5 were female children aged 12-17.

CALL TO ACTION

This report provides an opportunity for action. Early identification of the issues enables government, agencies, schools, communities and parents to work together to support optimal child health and well-being in PEI. Research shows that interventions targeting the early years are highly cost-effective over a lifetime, leading to reduced social, judicial and health care costs. With this in mind, the following recommendations are made:

Addressing health inequity. Health inequity can be addressed through the redistribution of societal resources to improve the SDH, particularly for disadvantaged groups in PEI. Such actions enable individuals to increase control over, and to improve, their health. Since many of the SDH lie outside the health sector, action on the SDH will require broad



collaboration among individuals, communities, partner organizations and all levels of government. Many initiatives that address the SDH are already taking place across Prince Edward Island, yet more work is needed. A strategic approach to addressing the SDH should include:

Sustainable, root-cause, population-level interventions. Evidence-based childhood programs and support should remain an important priority for Prince Edward Island. Long-term focus is needed on high-impact, upstream interventions.

Research shows that interventions targeting the early years are highly cost-effective over a lifetime, leading to reduced social, judicial and health care costs.

Upstream investment. Financial and non-financial resources need to be allocated toward population-level interventions. Such an allocation of resources is an investment in the future of Island children.

Intersectoral engagement and governance. A robust, intersectoral governance structure is required to address the risk factors for chronic disease as well as the underlying SDH.

Health in all policies. Health equity should be integrated into public policy-making at all levels of government by systematically taking into account the health implications of decisions, seeking synergies, and avoiding harmful health impacts.

Surveillance and Responsive Environments.

The health, social services, education and justice systems that serve Island children and their families and communities provide many opportunities to ensure a responsive environment and optimal child health and well-being. However, from a population monitoring perspective, these systems are fragmented due to a lack of integration and ability to share information across sectors.

Monitoring progress. Ongoing, systematic population assessment and surveillance of the health and well-being of Island children is necessary to inform public policy. Government departments and agencies should work together to address legislative and information systems barriers to the collection and sharing of meaningful data required to inform funding, policy, and integrated service delivery decisions.

Responsive Environment. Government departments and agencies should use data-informed approaches to prevent health and well-being disparities by facilitating service linkages across health, social services, education and justice systems.

This report provides a baseline for key indicators of child health and well-being in PEI; however, addressing the issues around the collection of meaningful data in robust electronic systems and subsequent data sharing are essential to enable informed decisions to foster the health and well-being of children in PEI today and in the years to come.

Health equity is a value we all share. Continued efforts to close the gap for those with high material and social deprivation and low family affluence will have a lasting and significant impact and ensure that all Island children are able to realize their own unique and full potential.

TABLE OF CONTENTS

Preface.....	V
Executive Summary.....	VI
Social Determinants of Health and Child Well-Being.....	VII
Key Findings.....	VIII
Call to Action	VIII
SECTION 1: Introduction.....	1
Social Determinants of Health and Child Well-Being.....	2
Measurement of Child Health and Well-Being.....	3
Socio-Economic Determinants.....	4
The Material and Social Deprivation Index.....	4
The Family Affluence Scale III	5
Data Limitations	6
SECTION 2: Health and Well-Being Indicators.....	9
Population Statistics	10
Children on PEI	10
Birth Rate.....	12
Mortality Rate	13
Infant Mortality.....	13
Childhood Mortality	13
Economic Demographics.....	14
Children in Low-Income Families, Economic Family Type, Family Income.....	14
Physical and Mental Health.....	15
Low Birth Weight	15
Breastfeeding Duration.....	16
Immunization	18
Immunization Uptake by Grade Two	18
Immunization Uptake by Grade One Entry	20
Health Behaviours	22
Physical Activity.....	22
Healthy Eating.....	24
Tobacco Smoking.....	26
Binge/Heavy Drinking.....	28
Cannabis Use	30



Body Weight	32
Measured Body Mass Index (4 Years)	32
Self-Reported Obesity.....	34
Asthma	36
Mental Illness	38
Health Care Utilization	40
Acute Inpatient Hospitalization.....	40
Most Responsible Diagnoses Associated with Acute Inpatient Hospitalization	42
Injury	44
Healthy Childhood Development.....	46
Best Start	46
Ages & Stages Questionnaires® (18 months)	48
Nutrition Risk – Toddlers and Preschoolers.....	50
Food Insecurity	51
Screen Time.....	52
Cognitive Development.....	54
Children in Licensed Childcare Centres	54
Early Years Evaluation	56
School Achievement	57
Math – Grades 3, 6, and 9	57
Reading Comprehension – Grades 3, 5/6, and 9.....	58
Writing – Grades 3, 5/6, and 9	58
Social Environment	60
Family with Children.....	60
Children in Care	62
Childhood Victimization	64
Incidents of Crime by Young People.....	66
SECTION 3: Conclusion	69
Key Findings.....	70
Call to Action	72

1

INTRODUCTION





Child health and well-being describe the general quality of life of children. During the formative years of life, rapid development occurs in every domain. Research has shown that high levels of stress and adversity in childhood have lifelong consequences, including poor behavioural and lifestyle decision-making, low educational attainment and an increased incidence and prevalence of chronic disease.⁽¹⁾ The experiences of the formative years have long term implications for the individual and for society as adulthood is formed from childhood.⁽²⁾

When provided with positive life experiences that encourage healthy development and early support when facing challenges, children are able to reach their highest potential. Unfortunately, for many Canadian children these positive experiences and early supports for challenges are not always readily available. In the 2013 UNICEF Report Card on Child Well-Being in Rich Countries, Canada ranked in a middle position at 17th out of 29 of the world's richest countries.⁽³⁾ Canadian children who live in poverty or identify as Indigenous fare worse than the average Canadian child.⁽³⁾ Cost-benefit analyses have demonstrated the cost effectiveness of investments in early childhood environments and comprehensive early childhood programming.⁽⁴⁾

SOCIAL DETERMINANTS OF HEALTH AND CHILD WELL-BEING

The health and development of individuals is shaped by an array of factors that vary by life course stage. The role of social factors in determining health outcomes is widely acknowledged, consistently affirming that social factors have a marked influence on the health of populations. Population health is driven by socio-economic factors, called the Social Determinants of Health, that shape the conditions in which we live, learn, work and play. **The Social Determinants of Health (SDH)** is a term used to describe the interrelated societal conditions that influence people's health.⁽⁵⁾ Genetic history, biology and environmental exposures can all have an impact on health, and form part of the complex etiology of physical and mental health problems.⁽⁶⁾

Similar to other Canadian jurisdictions, the majority of PEI's disease burden is now caused by four **chronic disease clusters**: cancer, cardiovascular disease, chronic pulmonary disease (e.g. COPD) and diabetes. Fortunately, a large proportion of these diseases can be prevented or delayed. The World Health Organization estimates that 80% of premature mortality due to these four disease clusters is attributable to **four modifiable risk factors**: poor

diet, physical inactivity, tobacco use and harmful use of alcohol. Chronic physical conditions and mental health are closely associated. **Mental illness** is a leading cause of disability in PEI and its impact can be reduced by promoting mental health across the lifespan.⁽⁷⁾

The SDH affect young people's development, health and well-being. Its broad areas of focus – social context, health outcomes, health behaviours and risk behaviours – encapsulate key factors that influence young people's health and well-being, opportunities and life chances.⁽⁸⁾ In addition to the SDH, the social environment also influences **non-health outcomes**, contributing to the overall picture of child well-being.⁽⁶⁾ Much of the literature in the field of crime prevention, youth violence, victimization, and addictions indicates that the major risk factors fall into five life domains: 1) individual (e.g. aggression, antisocial behaviour, impulsivity, low intelligence); 2) family (e.g. criminal parents, parent-child separation, child maltreatment, low family socio-economic status); 3) peer (e.g. delinquent peer associations, gang membership, peer rejection); 4) school (e.g. poor academic performance, poor school attendance); and 5) community/neighbourhood (e.g. community



disadvantage; community violence).⁽⁶⁾⁽⁹⁾⁽¹⁰⁾ These risk factors may have minimal effects on their own, but when combined can have a strong interactive effect, and exposure to multiple risk factors over time can have a cumulative effect, resulting in additional risks to well-being.⁽⁶⁾

MEASUREMENT OF CHILD HEALTH AND WELL-BEING

There are two approaches to measuring child health and well-being. The first approach is to define the important domains, such as education or

health and safety, and create indicators to measure these dimensions. The second is to express child well-being in terms of subjective self-reported health and well-being. These two approaches can be combined when subjective measures of well-being are incorporated as indicators in composite indices.⁽¹¹⁾ The combined approach was used in this report. Selected indicators were divided into four health and well-being domains that together play a significant role in a child's life: physical and mental health, healthy childhood development, cognitive development, and the social environment (Table A).

TABLE A: DOMAINS OF CHILD HEALTH AND WELL-BEING IN PEI

Physical and Mental Health	Healthy Childhood Development	Cognitive Development	Social Environment
1. Low Birth Weight	9. Best Start =	12. Children in Licensed Childcare Centres	15. Family with Children =
2. Breastfeeding Duration =	10. Ages and Stages Questionnaires® =	13. Early Years Evaluation	16. Children in Care
3. Immunization - Uptake by Age Two - Uptake by Grade One Entry	11. Nutrition Risk - Food Insecurity = - Screen Time =	14. School Achievement - Math - Reading Comprehension - Writing	17. Childhood Victimization
4. Health Behaviours - Physical Activity = - Healthy Eating = - Tobacco Smoking - Binge/Heavy Drinking - Cannabis Use			18. Incidents of Crime by Young People
5. Body Weight - Measured Body Mass Index = - Self-Reported Obesity =			
6. Asthma =			
7. Mental Illness =			
8. Health Care Utilization - Acute Inpatient Hospitalization = - Most Responsible Diagnoses - Injury =			

Family Affluence

Material and Social Deprivation



SOCIO-ECONOMIC DETERMINANTS

In previous reports from the Chief Public Health Office, household income has been used as a socio-economic factor when analyzing PEI health outcomes. However, the socio-economic factors contributing to the health and well-being of children are numerous, extending beyond household income. This report introduces two socio-economic proxies to further stratify the selected indicators: the **Material and Social Deprivation Index** and the **Family Affluence Scale III**.

The Material and Social Deprivation Index

It is important that health inequalities be measured and monitored to promote actions that improve health and reduce such inequalities. Presently, population health and disease burden is often monitored through the use of health administrative databases, but most of these databases do not contain socio-economic information on individuals. To overcome this absence and still describe the existence and magnitude of social inequalities in health using these databases, an area-based material and social deprivation index was developed for Quebec and Canada.⁽¹²⁾ The concept of this deprivation index originated with the ideas of Peter Townsend, who described deprivation as “a state of observable and demonstrable disadvantage relative to local community or the wider society or nation to which the individual, family or group belongs”.⁽¹³⁾ Since its development in the late 1990s for Quebec and 2007 and 2008 for Canada,

this deprivation index has been validated and extensively used throughout Canada.⁽¹⁴⁾ The Material and Social Deprivation Index is a marker of inequalities, and a socio-economic proxy. It is made up of six socio-economic indicators: 1) the proportion of people with no high school diploma or certificate; 2) the ratio of employment to population; 3) average personal income; 4) proportion of people separated, divorced or widowed; 5) proportion of people living alone; and 6) proportion of single-parent families. The deprivation index is structured so that quintile 5 indicates most deprived, while quintile 1 indicates most privileged. Please note, this structure is in reverse to what has been used when presenting household income in previous CPHO reports, where quintile 5 represented Islanders with the highest income and quintile 1 represented those with the lowest income.

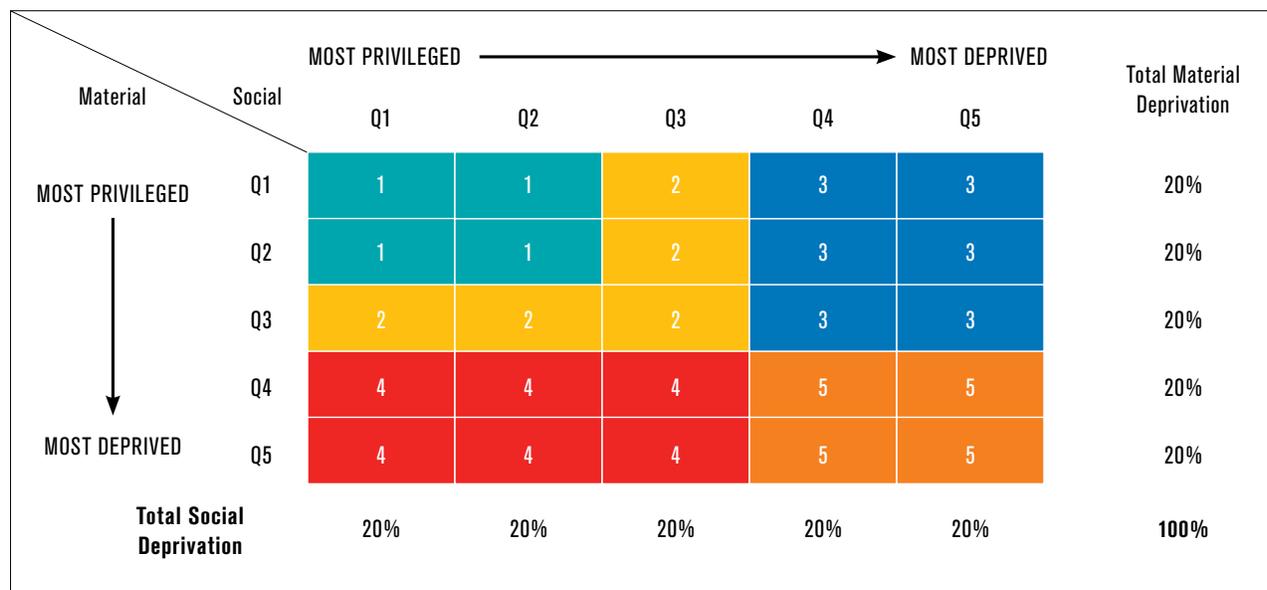
The material and social deprivation indices can be used and interpreted separately or they can be regrouped into one deprivation index. A regrouping method suggested by the Institut national de santé publique Québec (INSPQ) was used for this report and is shown below.

This area-based deprivation index was assigned to individuals based upon their postal code. If the postal code was not available in the data source, an assessment of the deprivation index and in turn the impact of socio-economic status was not possible for some report indicators.

It is important that health inequalities be measured and monitored to promote actions that improve health and reduce such inequalities.



REGROUPING OF THE MATERIAL AND SOCIAL DEPRIVATION QUINTILES



The Family Affluence Scale III 🏠

The Health Behaviours of School-Aged Children (HBSC) is a cross-national survey led by the World Health Organization and completed every 4 years in more than 40 different countries, including Canada. Developed in 1997 by the HBSC, the Family Affluence Scale (FAS) was designed to measure material affluence, a proxy for socio-economic status, in school-aged children.⁽¹⁵⁾ The FAS has been revised over time to maintain relevance with respect to changes in living conditions, societal norms, and technology. The most recent version, FASIII, was developed and validated in 2012 prior to being implemented in the 2014 HBSC survey cycle.⁽¹⁶⁾⁽¹⁷⁾ The FASIII comprises six questions assessing common material assets and activities: 1) “Do you have your own bedroom

for yourself?”; 2) “How many bathrooms are in your home?”; 3) “Does your family own a car, van or truck?”; 4) “How many times did you and your family travel out of Canada for vacation last year?”; 5) “Does your family have a dishwasher at home?”; and 6) “How many computers does your family own?”.⁽¹⁸⁾ Responses to these questions are scored and summed, and the overall Family Affluence Score is used to categorize the HBSC respondents in the lowest 20% (low affluence), middle 60% (medium affluence), and highest 20% (high affluence) groups.⁽¹⁸⁾

The Family Affluence Scale III was utilized in the absence of postal code data but was only available for report indicators that relied on data from the Health Behaviours of School-Aged Children survey.



DATA LIMITATIONS

When reading this report, it is important to note that three key limitations of the data were encountered:

1. Legislative Restrictions – departments were prevented from sharing certain record level data with the CPHO. This prohibited the linking of datasets to follow children throughout their life courses and as they interacted with different departments. It also precluded analyzing some datasets with respect to socio-economic factors.
2. Program Evaluation Purpose - much of the data collected was for program evaluation purposes. To conduct population assessment and surveillance, data elements had to be repurposed and were frequently absent.
3. Paper Records - some of the data were collected in paper records. This method of data entry and storage greatly hindered data validation and analysis.





References

- Shonkoff JP, Garner AS, The Committee on psychological aspects of child and family health, Committee on early childhood, adoption and dependent care and section on developmental and behavioral pediatrics, Siegel BS, Dobbins MI, Earls MF, et al. The lifelong effects of early childhood adversity and toxic stress. *Pediatrics* [Internet]. 2012 Jan 1 [cited 2016 Nov 20];129(1):e232-46. Available from: <http://pediatrics.aappublications.org/cgi/doi/10.1542/peds.2011-2663>
- Government of Canada. The well-being of Canada's young children [Internet]. Ottawa, Ontario: Government of Canada; 2011 p. 88. Report No.: SP-1027-04-12E. Available from: http://www.dpe-agje-ecd-elcc.ca/eng/ecd/well-being/sp_1027_04_12_eng.pdf
- UNICEF Canada. Stuck in the middle: Child well-being in rich countries: A comparative overview: Canadian companion. Unicef Canada; 2013 p. 17. Report No.: 11.
- Ready for Life: A Socio-Economic Analysis of Early Childhood Education and Care [Internet]. [cited 2017 Nov 6]. Available from: [http://www.conferenceboard.ca/\(X\(1\)S\(hkwq2q02i2mgrnh2ndjjiay0\)\)/e-library/abstract.aspx?did=9231&AspxAutoDetectCookieSupport=1](http://www.conferenceboard.ca/(X(1)S(hkwq2q02i2mgrnh2ndjjiay0))/e-library/abstract.aspx?did=9231&AspxAutoDetectCookieSupport=1)
- Government of Canada PHA of C. What Makes Canadians Healthy or Unhealthy? - Population Health Approach - Public Health Agency of Canada [Internet]. 2001 [cited 2014 Feb 27]. Available from: <http://www.phac-aspc.gc.ca/ph-sp/determinants/determinants-eng.php>
- Zubrick SR, Shepherd CCJ, Dudgeon P, Gee G, Paradies Y, Scrine C, et al. Working Together: Aboriginal and Torres Strait Islander Mental Health and Wellbeing Principles and Practice. In: *Social Determinants of Social and Emotional Wellbeing* [Internet]. 2nd ed. Canberra, The University of Western Australia: Dudgeon P, Milroy H, Walker R, editors; 2014 [cited 2017 Nov 6]. p. 93-112. Available from: [http://research-repository.uwa.edu.au/en/publications/social-determinants-of-social-and-emotional-wellbeing\(e23cb102-0d7b-4b98-88f4-228fb5a43a7d\)/export.html](http://research-repository.uwa.edu.au/en/publications/social-determinants-of-social-and-emotional-wellbeing(e23cb102-0d7b-4b98-88f4-228fb5a43a7d)/export.html)
- Mental Health Commission of Canada. Changing Directions, Changing Lives: The Mental Health Strategy for Canada Summary. 2012;
- Currie C, Levin KA, Kirby JLM, Currie DB, van der Sluijs W, Inchley JC. Health behaviour in school-aged children: World Health Organization collaborative cross-national study (HBSC): Findings from the 2010 HBSC survey in Scotland. 2011 [cited 2017 Apr 19]; Available from: <https://research-repository.st-andrews.ac.uk/handle/10023/2076>
- Day DM, Wanklyn SG. Identification and Operationalization of the Major Risk Factors for Antisocial and Delinquent Behaviour among Children and Youth [Internet]. Ottawa: National Crime Prevention Centre (NCPC); 2016 Jan [cited 2017 Nov 6] p. 71. Available from: <https://www.publicsafety.gc.ca/cnt/rsrscs/pblctns/2012-03-adb/2012-03-adb-eng.pdf>
- Shader M. Risk Factors for the Perpetration of Youth Violence [Internet]. *Youth Violence: Risk and Protective Factors*. 2017 [cited 2017 Nov 6]. Available from: <https://www.cdc.gov/violenceprevention/youthviolence/riskprotectivefactors.html>
- Organisation for Economic Co-operation and Development, editor. Doing better for children. Paris: OECD; 2009. 191 p.
- Pampalon R, Hamel D, Gamache P, Philibert M, Raymond G, Simpson A. An Area-based Material and Social Deprivation Index for Public Health in Quebec and Canada. *Can J Public Health*. 2012 Oct;103(Suppl. 2):S17-22.
- Townsend P. Deprivation. *J Soc Policy* [Internet]. 1987 Apr;16(2):125-46. Available from: <https://www.cambridge.org/core/journals/journal-of-social-policy/article/deprivation/071B5D2C0917B508551AC72D941D6054>
- Pampalon R, Hamel D, Gamache P, Simpson A, Philibert D. Validation of a deprivation index for public health: a complex exercise illustrated by the Quebec index. *Chronic Dis Inj Can*. 2014 Feb;34(1):12-22.
- Currie CE, Elton RA, Todd J, Platt S. Indicators of socioeconomic status for adolescents: the WHO Health Behaviour in School-aged Children Survey. *Health Educ Res*. 1997 Sep;12(3):385-97.
- Hartley JEK, Levin K, Currie C. A new version of the HBSC Family Affluence Scale - FAS III: Scottish Qualitative Findings from the International FAS Development Study. *Child Indic Res* [Internet]. 2016 Mar 1 [cited 2017 Aug 1];9(1):233-45. Available from: <https://link.springer.com/article/10.1007/s12187-015-9325-3>
- Torsheim T, Cavallo F, Levin KA, Schnohr C, Mazur J, Niclasen B, et al. Psychometric Validation of the Revised Family Affluence Scale: a Latent Variable Approach. *Child Indic Res* [Internet]. 2016 Sep [cited 2017 Apr 19];9(3):771-84. Available from: <http://link.springer.com/10.1007/s12187-015-9339-x>
- Inchley J, Currie D, Young T, Samdal O, Torsheim T, Augustson L, et al. Growing up unequal: gender and socioeconomic differences in young people's health and well-being : Health Behaviour in School-Aged Children (HBSC) Study : international report from the 2013/2014 survey. 2016.



2

HEALTH AND WELL-BEING INDICATORS

POPULATION STATISTICS

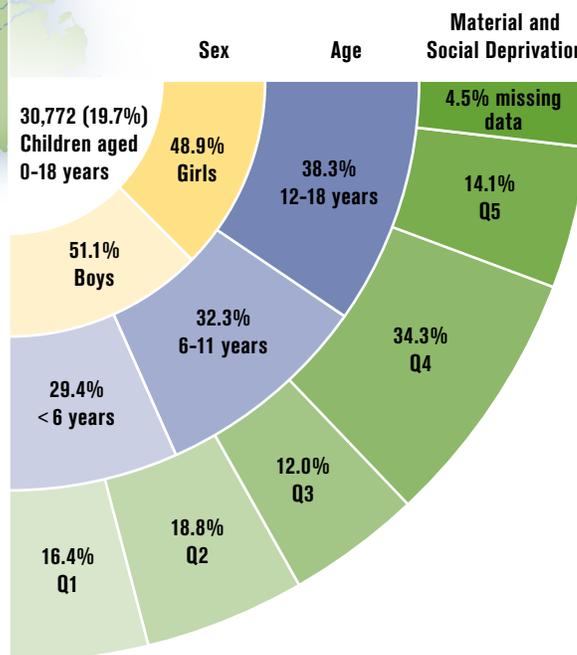
CHILDREN ON PEI

In 2016/17, Prince Edward Island had 155,013 active personal health card numbers with 30,772 belonging to children aged zero to 18 years (representing 20% of the population). Of the children, 51% are boys and 49% are girls.

- The preschool years (0 to <6 years) is a critical period for foundational physical and social development⁽¹⁾ – 30% of our children are preschoolers.
- As they navigate from early childhood into adolescence and experience a wider social environment, children in middle childhood (6 to 11 years) undergo important emotional, social, cognitive and physical development⁽²⁾ – 32% of our children are in middle childhood.
- Profound developmental changes occur in adolescence (12 to 18 years). By the end of this stage, teenagers have accomplished many developmental tasks such as achieving their adult size, adjusting to sexually maturing bodies, developing emotional sophistication and moral reasoning, and establishing the key aspects of their identity, among many others⁽³⁾ - 38% of our children are in adolescence.

Deprivation can be defined as “a state of observable and demonstrable disadvantage relative to local community or the wider society or nation to which the individual, family or group belongs”⁽⁴⁾. Using the Material and Social Deprivation Index, almost half of Island children are living in areas that fall within the two most deprived quintiles for material and social deprivation.





Definition:

Material and Social Deprivation Index is a marker of inequalities, and a socioeconomic proxy. The deprivation index is structured so that quintile 5 indicates most deprived, while quintile 1 indicates most privileged. For more information about the Index, refer to Page 4.

Data Source:

PEI Medicare Eligibility Registry of active personal health card numbers in 2016/17

References:

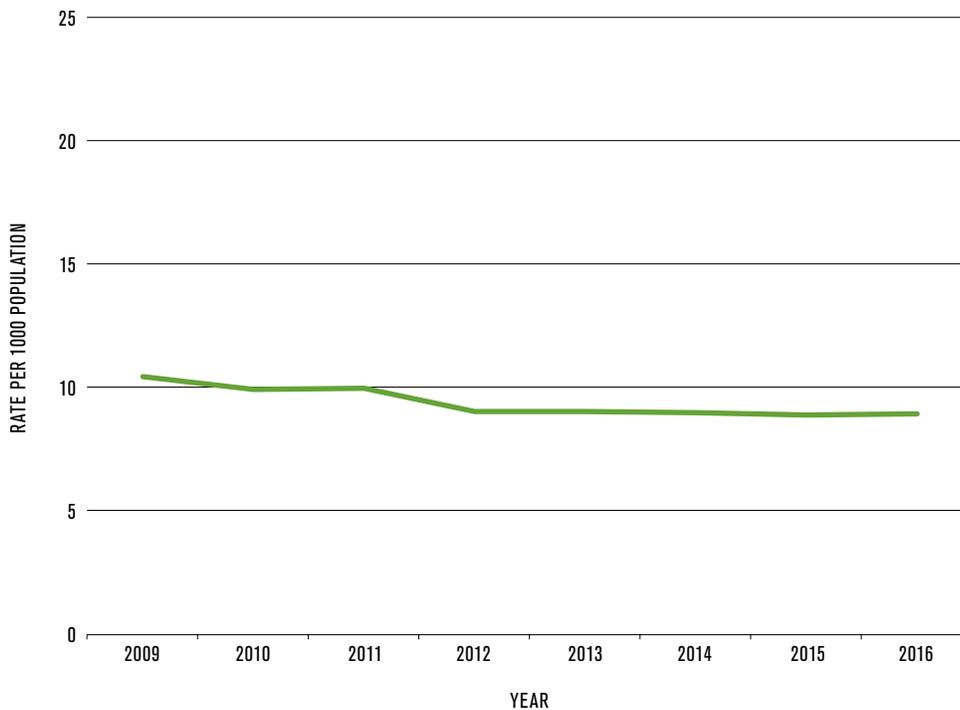
- Royal College of Physicians & Surgeons of Canada *Royal College Position Statement: Early Childhood Development*; Position Statement; Royal College of Physicians & Surgeons of Canada, 2013.
- Hanvey, L. (2006) Issues affecting the well-being of Canadian children in the Middle Years-6 to 12: A discussion paper, *Natl. Child. Alliance Ott.*
- SIMPSON, A. R. *Raising Teens: A Synthesis of Research and a Foundation for Action*; Center for Health Communication, Harvard School of Public Health: Boston, 2001.
- Townsend, P. (1987) Deprivation, *J. Soc. Policy*, 16, 125-146.

BIRTH RATE

Birth rate is the number of live births in a calendar year per 1,000 persons and is a factor in determining the rate of population growth.⁽¹⁾ Prince Edward Island has had a stable birth rate over the past five years at about 9 births per 1,000 population.



BIRTH RATE, PEI, 2009 - 2016



Data Source:

Statistics Canada. Table 053-0001 - Estimates of births, deaths and marriages, Canada, provinces and territories, quarterly (number); 2009 - 2012 is final data, 2013 - 2015 is updated data, and 2016 is preliminary data (accessed: May 23, 2017)

Statistics Canada. Table 051-0001 - Estimates of population, by age group and sex for July 1, Canada, provinces and territories, annual (persons unless otherwise noted) (accessed: March 02, 2017)

References:

1. P.E.I. Statistics Bureau *Province of Prince Edward Island Forty-third Annual Statistical Review 2016*; Annual Report; Government of Prince Edward Island, 2017.



MORTALITY RATE

Infant Mortality

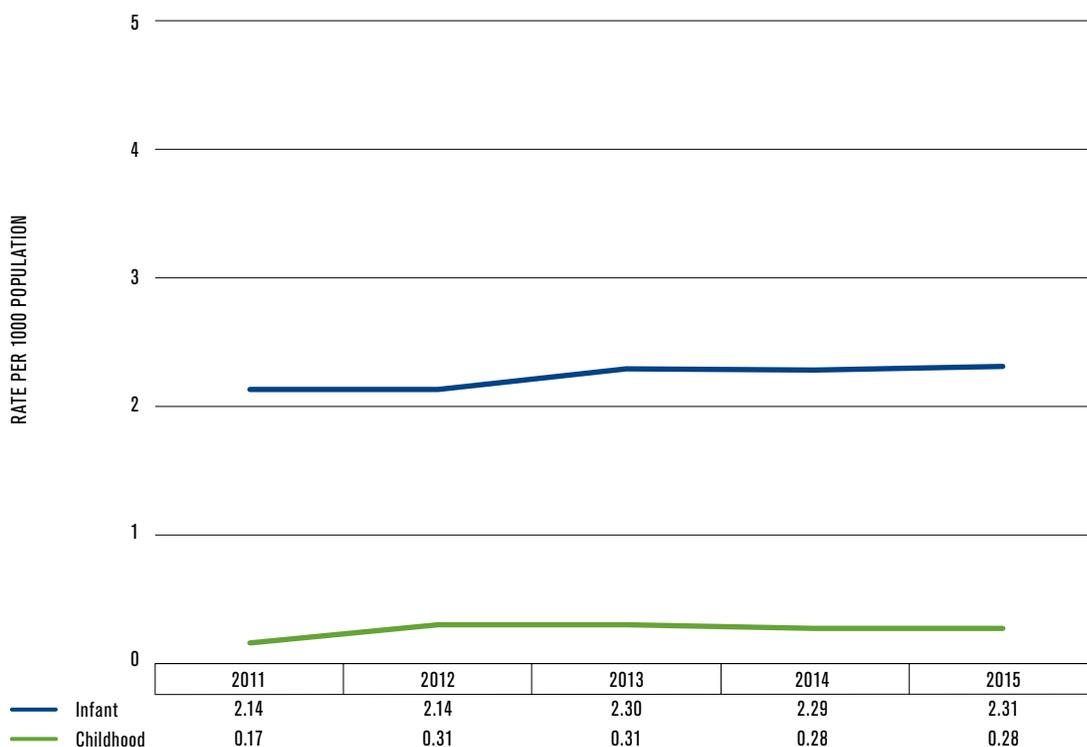
Infant mortality is defined as the death of a child under one year of age.

PEI's yearly infant mortality rate has remained stable for the past five years, at about two deaths per 1,000 people under 1 year of age.

Childhood Mortality

Deaths in children between age 1 and age 18 are classified here as childhood mortality. PEI has had a stable yearly childhood mortality rate of less than one death per 1,000 people aged 1 to 18 for the most recent five years.

AGE-SPECIFIC MORTALITY RATE PER 1,000 POPULATION, PEI, 2011 - 2015



Methodology:

Infant mortality rate is calculated as the number of deaths of children less than one year of age per 1,000 children in this age group. Infant mortality and age-specific childhood mortality were calculated using the age-specific populations from Statistics Canada.

Data Source:

Statistics Canada, Canadian Vital Statistics, Death Database, Table 102-0503 - Deaths, by age and sex, Canada, provinces and territories, annual (number) (accessed: May 05, 2017)

Statistics Canada, Table 051-0001 - Estimates of population, by age group and sex for July 1, Canada, provinces and territories, annual (persons unless otherwise noted) (accessed: March 02, 2017)

ECONOMIC DEMOGRAPHICS

CHILDREN IN LOW-INCOME FAMILIES, ECONOMIC FAMILY TYPE, FAMILY INCOME

Low-income families have a difficult time affording basic needs like food, clothing, and housing. Material disadvantage, including lower income, education and employment rate, is associated with poorer health.⁽¹⁾ In previous reports, the CPHO has found that Islanders with the lowest household income have higher than average rates of treated mood and anxiety disorders, as well as chronic health conditions such as diabetes and hypertension.⁽²⁾

- About 1 in 4 Islanders living with low income are under the age of 18.
- About 1 in 5 Island children live in low income situations.

Single parent families earn about half the income of two-parent families. Single parent families represent 27% of all families with children in PEI.

About 1 in 4 Islanders living with low income are under the age of 18.

CHILDREN IN LOW-INCOME FAMILIES, ECONOMIC FAMILY TYPE, FAMILY INCOME, PEI, 2015

Children in Low-Income Families		Percent (%)
Children in low income (of population in low income)		25.5
Children in low income (of all children <18 years)		21.7
Economic Family Type		
Single parent families		27.0
Couple parent families		73.0
Income by Family Type		Median Income
	Before tax	After tax
	\$	\$
Couple family with child(ren)	99,568	84,712
Single-parent family	46,073	42,468

Definition:

The 'Low-income measure, after tax' (LIM-AT) refers to a fixed percentage (50%) of median-adjusted after-tax income of private households. The household after-tax income is adjusted by an equivalence scale to take economies of scale into account. This adjustment for different household sizes reflects the fact that a household's needs increase but at a decreasing rate as the number of members increases.

Data Source:

Statistics Canada. 2017. Census Profile. 2016 Census. Statistics Canada Catalogue no. 98-316-X2016001. Ottawa. Released November 29 2017.

References:

1. Canadian Population Health Initiative *Reducing gaps in health: a focus on socio-economic status in urban Canada*; Canadian Population Health Initiative: Ottawa, 2008.
2. Chief Public Health Office, W. E. Chief Public Health Officer's Report 2016 - Health For All Islanders <https://www.princeedwardisland.ca/en/publication/chief-public-health-officers-report-2016-health-all-islanders-0> (accessed Sep 5, 2017).

PHYSICAL AND MENTAL HEALTH

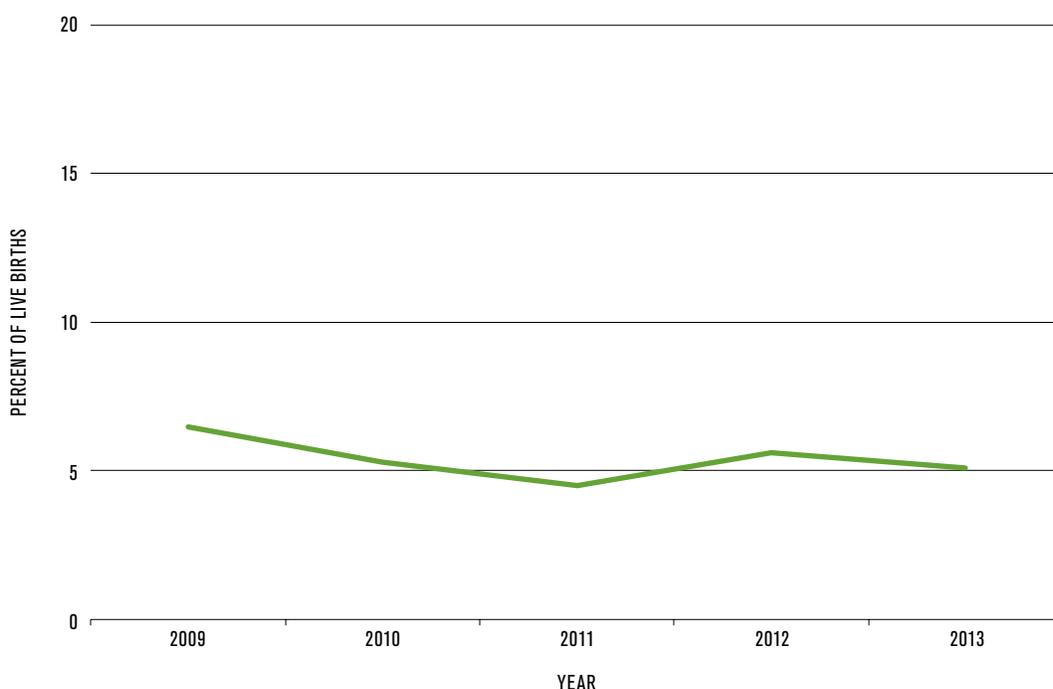
LOW BIRTH WEIGHT

Birth weight has been shown to be the most important factor for determining health outcomes in the perinatal, neonatal, and post-natal periods of newborn life. Low birth weight (500 to 2,499 g [1.1 to 5.5 lbs.] at birth) babies are at increased risk of infant mortality, as well as developmental problems and chronic diseases later in life.⁽¹⁾ Low birth weight is most commonly encountered in disadvantaged

populations and is associated with risk factors such as material and social deprivation, poor maternal nutrition during pregnancy, and use of tobacco, alcohol and recreational drugs while pregnant.⁽²⁾

In 2013, 1 in 20 babies born in PEI was low birth weight and this rate has remained relatively constant since 2009. From 2009 to 2013, the average birth weight for babies in PEI was 3,469 grams (7.6 lbs.).

LOW BIRTH WEIGHT (500 TO 2,499 GRAMS) BABIES, PEI, 2009 - 2013



Data Source:

Statistics Canada. Table 102-4509 - Live births, by birth weight and sex, Canada, provinces and territories, annual (accessed: May 24, 2017)

References:

1. PEI Reproductive Care Program *Prince Edward Island Reproductive Care Program Perinatal Database Report 2011*; Surveillance; Department of Health and Wellness: PEI, 2013.
2. Ministry of Health and Long-Term Care. 2011 Annual Report of the Chief Medical Officer of Health of Ontario to the Legislative Assembly of Ontario http://www.health.gov.on.ca/en/common/ministry/publications/reports/cmoh_13/cmoh_13.pdf (accessed Nov 30, 2017).
3. Committee to Study the Prevention of Low Birthweight; Division of Health Promotion and Disease Prevention; Institute of Medicine. *Preventing Low Birthweight*. Washington (DC): National Academies Press (US); 1985 Jan 1. <https://www.ncbi.nlm.nih.gov/books/NBK214468/> doi: 10.17226/511 (accessed Nov 30, 2017).

BREASTFEEDING DURATION

The World Health Organization (WHO) has described breastfeeding as “an unequalled way of providing ideal food for the healthy growth and development of infants”⁽¹⁾. For healthy term infants, exclusive breastfeeding for the first six months is recommended. Supported by the evidence that breastfeeding beyond 6 months of age provides extended protection against infectious diseases and may decrease the risk of childhood obesity, continued breastfeeding along with appropriate complementary foods up to two years of age or beyond has been promoted by many organizations including the WHO and the Canadian Paediatric Society.^(2,3)

In 2013, the Department of Health and Wellness and Health PEI endorsed a Breastfeeding Policy.

The goals of the policy include:

- Making breastfeeding a public health priority
- Re-establishing breastfeeding as our cultural norm
- Striving for Baby Friendly Initiative status in PEI facilities
- Working together to develop educational and communication materials

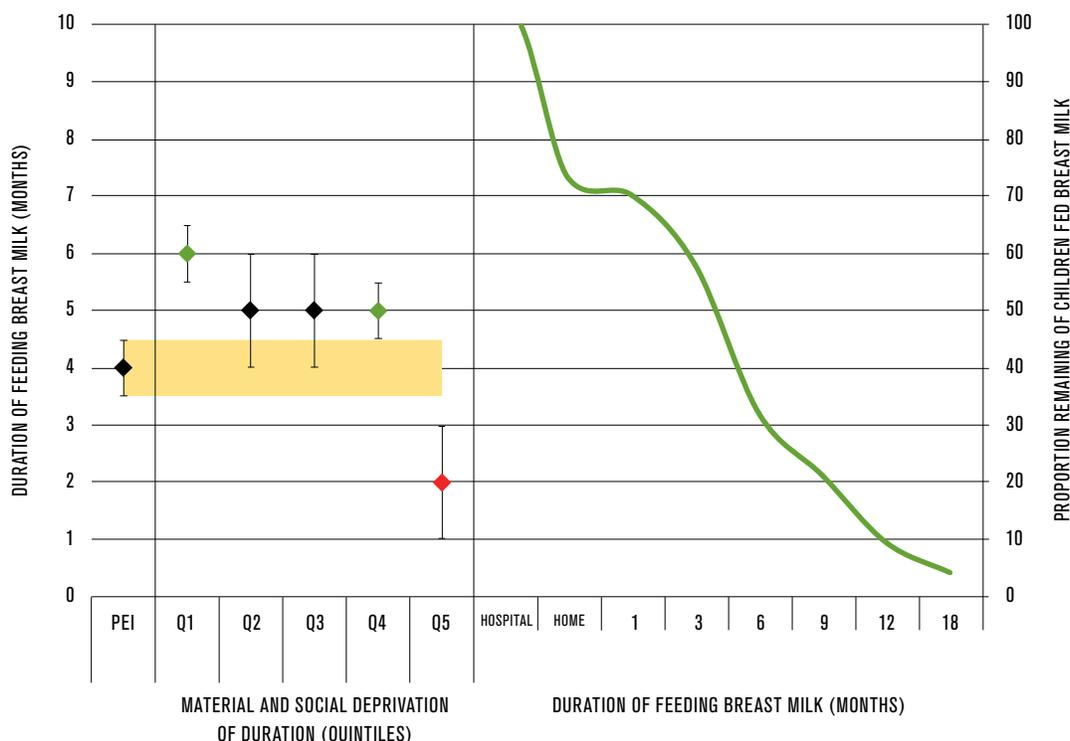
Compared to the PEI average, duration of feeding breast milk was shorter among the most deprived children and longer among the most privileged children.

During the five fiscal years from 2012/13 to 2016/17, 76.2% of PEI mothers initiated breastfeeding and median duration of feeding breast milk was four months. Duration of feeding breast milk was shorter among the most deprived children and longer among the most privileged children. Social and material deprivation can impact breast milk feeding in numerous ways. For example, higher educated parents might have greater knowledge of the benefits of breast milk and may be more inclined to seek information on breastfeeding.⁽⁴⁾ More privileged parents may also have better access to paid postpartum maternity leave, particularly for extended leave periods, which can increase breastfeeding establishment and duration.⁽⁵⁾

Rates of feeding breast milk decreased rapidly as children aged. For 25% of breast milk-fed infants, cessation of feeding breast milk occurred around the time of discharge from the hospital. By six months of age, only about 1 in 3 breast milk-fed children continued to receive some breast milk. This decreased to about 3 in 100 children at 18 months of age and to less than 1 in 1,000 at 24 months of age.



DURATION OF FEEDING BREAST MILK TO CHILDREN, PEI, 2012/13 - 2016/17

**Methodology:**

Breastfeeding was considered initiated if the child received any volume of breast milk after birth, as indicated to Health PEI Public Health Nursing. Duration of breastfeeding was considered to be the period of time the child was fed some quantity of breast milk, regardless if they were exclusively or partially breastfed. Children were included in the analysis if they had a valid PEI personal health card number during the fiscal year of the public health nursing assessment. Data from 2012/13 to 2016/17 were combined to create a large enough sample size to produce reliable estimates with stratification and to have enough power to detect statistically significant differences.

Definition:

Material and Social Deprivation Index is a marker of inequalities, and a socioeconomic proxy. The deprivation index is structured so that quintile 5 indicates most deprived, while quintile 1 indicates most privileged. For more information about the Index, refer to Page 4.

Data Source:

Health PEI Public Health Nursing Assessments and PEI Medicare Eligibility Registry

References:

1. World Health Organization and UNICEF. *Global strategy for infant and young child feeding*; World Health Organization, 2003.
2. Critch, J. N. (2014) Nutrition for healthy term infants, six to 24 months: An overview, *Paediatr. Child Health*, 19, 547-549.
3. Government of Canada, S. C. Breastfeeding trends in Canada <http://www.statcan.gc.ca/pub/82-624-x/2013001/article/11879-eng.htm> (accessed Sep 1, 2017).
4. Best Start Resource Centre *Breastfeeding and Socioeconomic Status*; Breastfeeding in Ontario; Fact Sheet 2; Ontario, 2015.
5. Guendelman, S., Kosa, J. L., Pearl, M., et al. (2009) Juggling work and breastfeeding: Effects of maternity leave and occupational characteristics., *Pediatrics*, 123, e38-e38-e46.



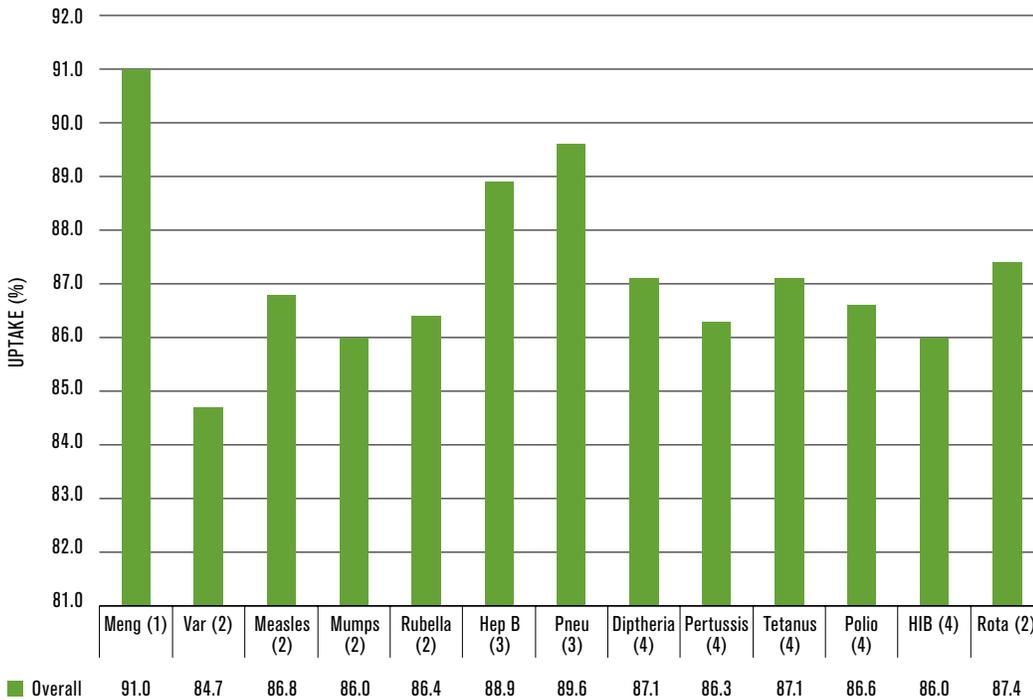
IMMUNIZATION

Diseases that were once common in childhood are now rare in Canada because of vaccines. For example, with routine vaccination, the incidence of measles in Canada has declined by over 99% from an average incidence rate of 373.3 cases per 100,000 population in the pre-vaccine era (1950 to 1954) to 0.8 cases per 100,000 population from 2011 to 2015.⁽¹⁾ However, cases of vaccine-preventable diseases (VPDs) continue to occur and many VPDs have no treatment or cure. The consequences of VPDs can be serious and in some cases, children can die from complications of a VPD.⁽²⁾

Immunization Uptake by Age Two

To have protection against VPDs, children generally receive their first vaccines at two months of age. It is important to start the immunization process early as babies are susceptible to diseases at a young age. In PEI it is recommended that children be immunized with the following antigens by 18 months of age: diphtheria, tetanus, pertussis, hepatitis B, polio, *Haemophilus Influenzae* type B, rotavirus, pneumococcal conjugate, measles, mumps, rubella, varicella, and meningococcal vaccine.⁽³⁾

IMMUNIZATION UPTAKE BY ANTIGEN BY AGE TWO, PEI, 2013 COHORT





Based on the 2005 National Consensus Conference for Vaccine-Preventable Diseases in Canada, PEI met the national immunization coverage targets for varicella (85%) and invasive pneumococcal disease (IPD) (90%) but did not reach the targets for rubella (97%), invasive meningococcal disease (IMD) (97%) or pertussis (95).⁽⁴⁾ These national targets are scheduled to be reviewed in the near future to reflect current immunization programs and disease epidemiology.

Methodology:

Children with a date of birth from January 1 to December 31, 2013 and a valid PEI personal health card number in 2015 were included in the analysis. Children who moved away from PEI or who were deceased based upon their Medicare file were excluded.

Data Source:

Health PEI Public Health Nursing Immunization Assessments and PEI Medicare Eligibility Registry

References:

1. Government of Canada, P. H. A. of C. Reported cases from 1924 to 2015 in Canada - Notifiable diseases on-line <http://diseases.canada.ca/notifiable/charts?c=pl> (accessed Oct 20, 2017).
2. Public Health Agency of Canada, Protect your child from serious diseases <https://www.canada.ca/en/public-health/services/vaccination-children/protect-your-child-serious-diseases.html> (accessed Jun 30, 2017).
3. PEI Department of Health and Wellness Adult and Child Immunization in PEI <https://www.princeedwardisland.ca/en/information/health-and-wellness/childhood-immunization-pe> (accessed Jun 30, 2017).
4. Public Health Agency of Canada *Final Report of Outcomes from the National Consensus Conference for Vaccine-Preventable Diseases in Canada*; Report 33S3; CCDR, 2007; pp. 1-56.
5. PEI Provincial Immunization Committee *Immunization Uptake Report - Prince Edward Island Childhood Immunization Program*; PEI Chief Public health Office, 2017.

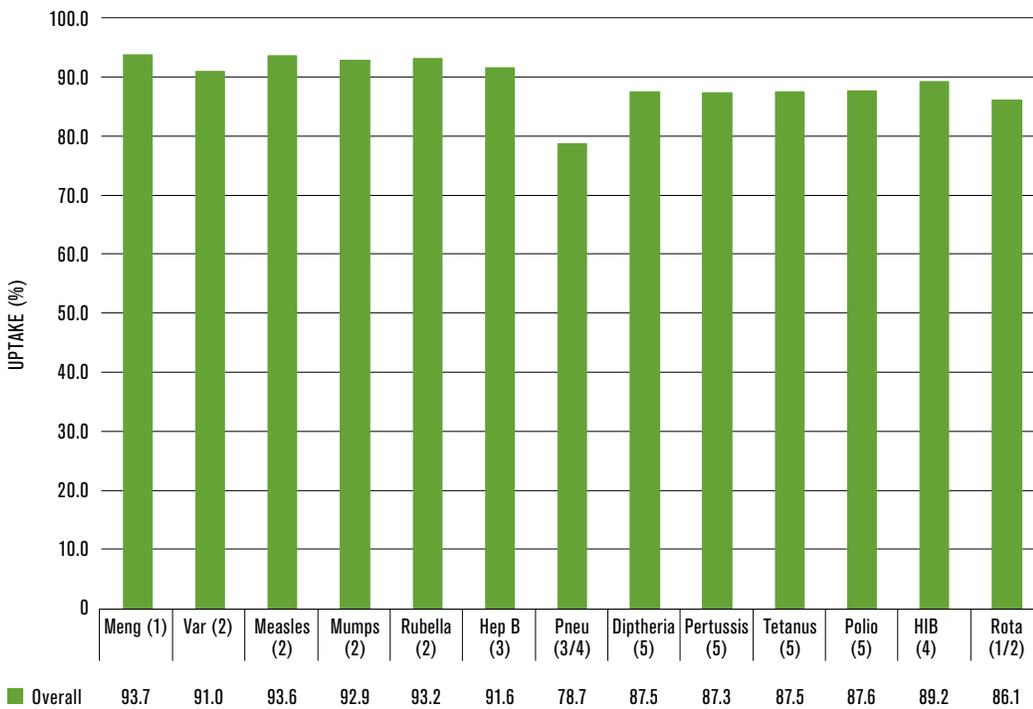


Immunization Uptake by Grade One Entry

Between the ages of four and five, booster doses of vaccines are administered to children. In PEI, it is recommended that children be immunized with the following antigens prior to school entry: diphtheria/tetanus, pertussis, polio, and varicella (if the child has not previously received two doses).⁽¹⁾

Based on the 2007 National Consensus Conference for Vaccine-Preventable Diseases in Canada, PEI exceeded the national immunization coverage targets for varicella (85%) but did not reach the targets for pertussis (95% by age seven) or rubella (97%).⁽²⁾

IMMUNIZATION UPTAKE BY ANTIGEN BY GRADE 1 ENTRY, PEI, 2010 COHORT



Across the country, this indicator is measured at varying age points and so prudence should be used when comparing to other provincial or territorial rates. PEI has determined that children should have their childhood boosters before they enter Grade one, which for some children occurs at five years of age. The childhood vaccine schedule that was previously used in PEI may have completed a child's immunization series by as late as six years of age. As such, PEI has adopted an earlier vaccine schedule that allows for all children to complete the immunization series prior to school entry. As the earlier vaccine schedule becomes more practiced, this indicator should improve.⁽³⁾

**Methodology:**

Children who attended grade one in 2016/17 at a PEI public or private school were included in the analysis. Children who were home schooled were excluded.

Data Source:

Health PEI Public Health Nursing Immunization Assessments, PEI school boards and private schools grade one student lists, and PEI Medicare Eligibility Registry

References:

1. PEI Department of Health and Wellness Adult and Child Immunization in PEI <https://www.princeedwardisland.ca/en/information/health-and-wellness/childhood-immunization-pei> (accessed Jun 30, 2017).
2. Public Health Agency of Canada *Final Report of Outcomes from the National Consensus Conference for Vaccine-Preventable Diseases in Canada*; Report 33S3; CCDR, 2007; pp. 1-56.

HEALTH BEHAVIOURS

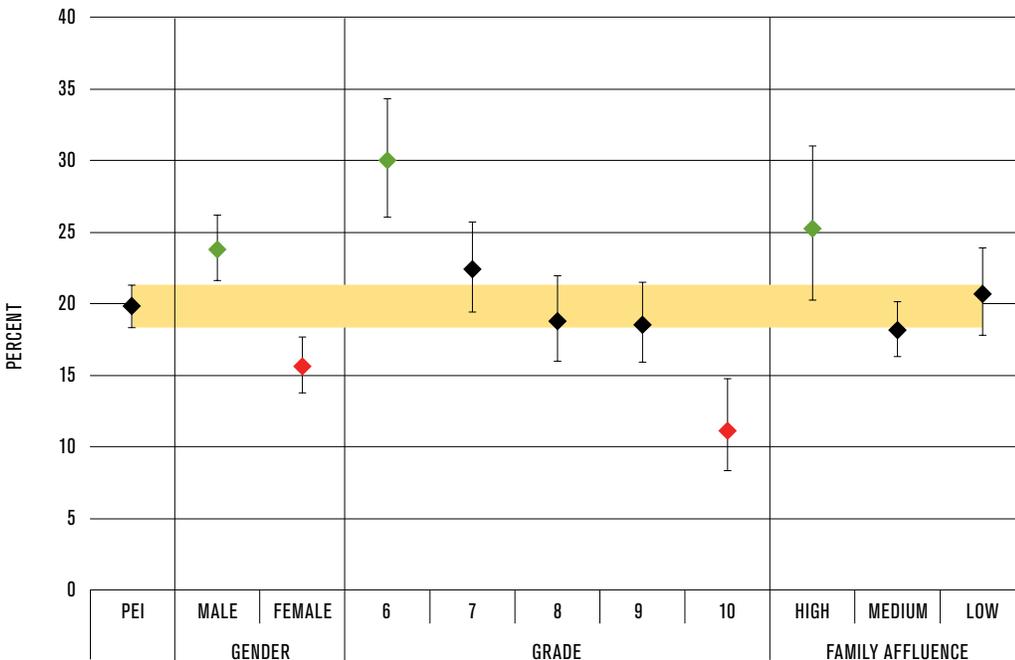
Physical Activity 

Physical activity is associated with numerous health benefits. Regular physical activity in school-aged children contributes to healthy weight, disease prevention, and good mental health.^(1,2) Furthermore, children that are physically active have higher achievement in school.⁽³⁾

Supported by the evidence of a dose-response relationship between physical activity and health (i.e. the more physical activity, the greater the health benefit), current Canadian Physical Activity Guidelines recommend that school-aged children (5-17 years) accumulate at least 60 minutes per day of moderate to vigorous physical activity.⁽⁴⁾

When asked about the frequency and duration of moderate to hard physical activity in a typical week, only 19.8% of students in grades 6 to 10 reported meeting Canada's Physical Activity Guidelines of at least 60 minutes per day. Rates of self-reported physical activity decreased as grade level increased. Significantly more males than females reported accumulating at least 60 minutes of moderate to hard physical activity in typical week (15.6% of females vs. 23.8% of males). Students with high family affluence are more likely to meet physical activity guidelines compared to the overall population of Grade 6 to 10 students in PEI.

STUDENTS WHO REPORTED AT LEAST 60 MINUTES OF MODERATE TO HARD PHYSICAL ACTIVITY 7 DAYS PER WEEK, PEI, GRADES 6 TO 10, 2014



**Corresponding Survey Question:**

Physical activity is any activity that increases your heart rate and makes you get out of breath some of the time. Physical activity can be done in sports, school activities, playing with friends, or walking to school. Over a typical or usual week, on how many days are you physically active for a total of at least 60 minutes per day?

Methodology:

Data was weighted to population levels on grade level and county.

Definition:

Family Affluence Scale is a measure of material affluence, a proxy for socioeconomic status. It is based on a series of six questions assessing common material assets and activities. Responses to these questions are scored and summed, and the overall Family Affluence Score is used to categorize the HBSC respondents in the lowest 20% (low affluence), middle 60% (medium affluence), and highest 20% (high affluence) groups. For more information about the Index, refer to Page 4.

Data Source:

Health Behaviour of School-Aged Children (HBSC) survey

References:

1. Janssen, I. and LeBlanc, A. G. (2010) Systematic review of the health benefits of physical activity and fitness in school-aged children and youth, *Int. J. Behav. Nutr. Phys. Act.*, 7, 40.
2. Ahn, S. and Fedewa, A. L. (2011) A Meta-analysis of the Relationship Between Children's Physical Activity and Mental Health, *J. Pediatr. Psychol.*, 36, 385-397.
3. Fedewa, A. L. and Ahn, S. (2011) The Effects of Physical Activity and Physical Fitness on Children's Achievement and Cognitive Outcomes: A Meta-Analysis, *Res. Q. Exerc. Sport*, 82, 521-535.
4. Canadian Society for Exercise Physiology Canadian Physical Activity Guidelines Statements 2012 http://www.csep.ca/cmfiles/guidelines/canadianphysicalactivityguidelinesstatements_e_2012.pdf (accessed Sep 5, 2017).

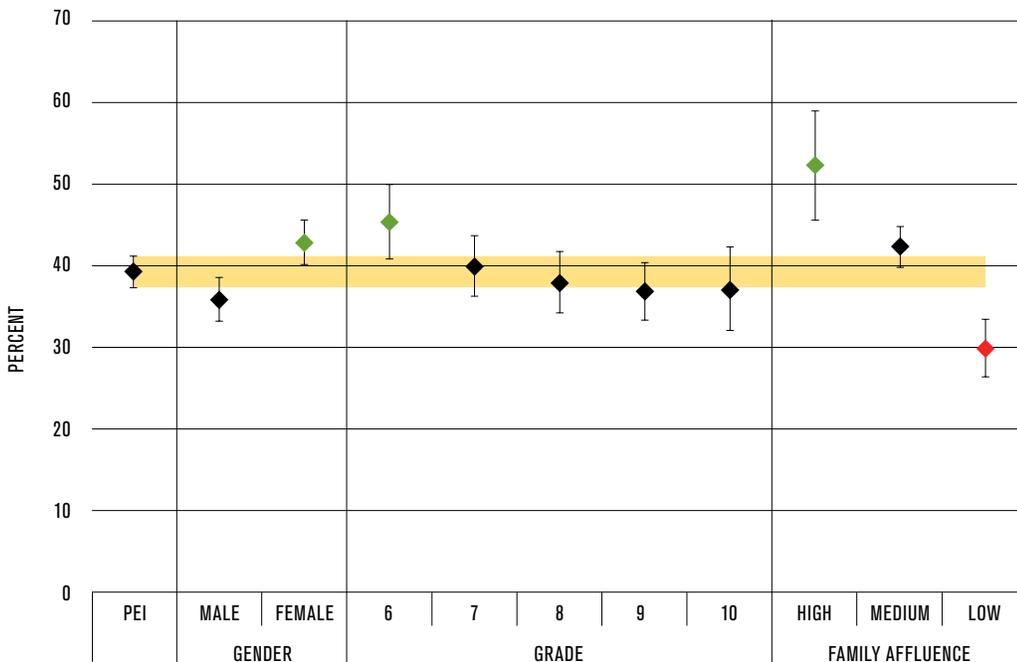


Healthy Eating 🍌

Healthy eating in childhood is necessary to support growth, good health, and cognitive development.⁽¹⁾ Furthermore, healthy eating patterns established in early life contribute to a reduced risk of chronic disease and obesity in adulthood.⁽¹⁾ Vegetable and fruit consumption can be used as a measure of overall diet quality.⁽²⁾ When asked about their weekly vegetable consumption, 39% of PEI students in Grades 6 to 10 reported eating vegetables at least once per day; similarly, when asked about their weekly fruit consumption, 43% of students reported eating fruits at least once per day.

Frequency of vegetable consumption was higher in females and decreased with increasing grade level. Family affluence had an important influence on vegetable consumption. Children with low family affluence were significantly less likely to report eating vegetables on a daily basis; conversely, children with high family affluence were significantly more likely to report daily vegetable consumption. While not displayed graphically, consumption of fruit followed similar patterns to those reported for vegetables.

STUDENTS WHO REPORTED EATING VEGETABLES AT LEAST ONCE PER DAY, PEI, GRADES 6 TO 10, 2014





Children with low family affluence were significantly less likely to report eating vegetables on a daily basis; conversely, children with high family affluence were significantly more likely to report daily vegetable consumption.

Corresponding Survey Questions:

How many times a week do you usually eat vegetables?

How many times a week do you usually eat fruit?

Methodology:

Data was weighted to population levels on grade level and county.

Definition:

Family Affluence Scale is a measure of material affluence, a proxy for socioeconomic status. It is based on a series of six questions assessing common material assets and activities. Responses to these questions are scored and summed, and the overall Family Affluence Score is used to categorize the HBSC respondents in the lowest 20% (low affluence), middle 60% (medium affluence), and highest 20% (high affluence) groups. For more information about the Index, refer to Page 4.

Data Source:

Health Behaviour of School-Aged Children (HBSC) survey

References:

1. Federal and Provincial (2012) Healthy Eating After School: Integrating healthy eating into after-school physical activity initiatives [Health Canada, 2012].
2. Garriguet, D. (2009) Diet quality in Canada, *Health Rep.*, 20, 41.

Tobacco Smoking

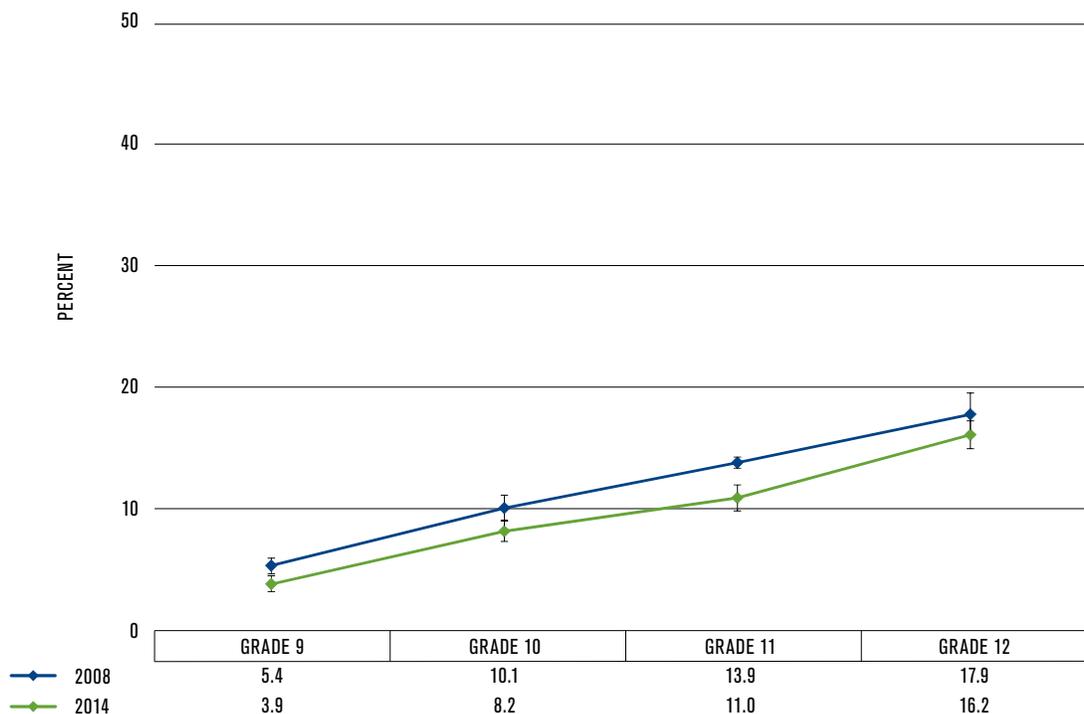
Initiation of smoking in adolescence is a strong predictor of smoking in adulthood.⁽¹⁾ Children and youth that smoke are at increased risk for numerous health consequences such as respiratory illness and declining lung function.⁽¹⁾ Smoking in adulthood is a well-established risk factor for four of the leading causes of morbidity and mortality in PEI: heart disease, stroke, respiratory disease and cancer.⁽²⁾ In 2014, 10.1% of students in Grades 9 to 12 reported being a current smoker. The prevalence of smoking in this population has only seen a slight decrease since 2008, when 11.9% of students reported being a smoker.

In 2014:

- Smoking rates were significantly higher in males (13.1%) than in females (6.9%).
- The proportion of smokers increased with increasing grade level, from 3.9% of students in Grade 9 to 16.2% of students in Grade 12.
- The median age at which current smokers in Grades 9 to 12 first tried a cigarette was 12.5 years old.

Data for Grades 6 to 8 was suppressed due to small numbers.

CURRENT SMOKERS, PEI, GRADES 9 TO 12, 2008 AND 2014



**Corresponding Survey Questions:**

Have you ever smoked a whole cigarette?

Have you ever smoked 100 or more whole cigarettes in your life?

On how many of the last 30 days did you smoke one or more cigarettes?

Methodology:

Data was analyzed using survey weights to adjust for sampling methods and to produce population-based estimates.

Definition:

A current smoker is defined as someone who has smoked 100 cigarettes or more in their lifetime, and has smoked a minimum of one whole cigarette in the past 30 days.

Data Source:

Canadian Student Tobacco, Alcohol and Drug Survey (CSTADS)

References:

1. Krueger, H. Child and Youth Health and Well-Being Indicators Project: Appendix F - Physical Health and Well-Being Evidence Review http://www2.gov.bc.ca/assets/gov/health/about-bc-s-health-care-system/office-of-the-provincial-health-officer/reports-publications/special-reports/appendix_f_-_physical_health_evidence_review.pdf (accessed Sep 15, 2017).
2. Chief Public Health Office, W. E. Chief Public Health Officer's Report 2016 - Health For All Islanders <https://www.princeedwardisland.ca/en/publication/chief-public-health-officers-report-2016-health-all-islanders-0> (accessed Sep 5, 2017).

Binge/Heavy Drinking

Binge drinking during adolescence is associated with increased risk for motor-vehicle accidents, acts of violence (both as victims and assailants), and suicidal behaviours.⁽¹⁾ Studies also show that binge drinking results in earlier sexual activity among teens and higher rates of unplanned pregnancy and sexual assault in teenage girls.⁽¹⁾ Regular consumption of alcohol before the age of 15 is strongly associated with alcohol dependence in later life.⁽¹⁾

In 2014, 42.8% of students in Grades 9 to 12 reported binge drinking at least once in the last 12 months and 26.3% reported binge drinking once a month or more. The prevalence of binge drinking in this population has decreased since 2008, when 49.9% of

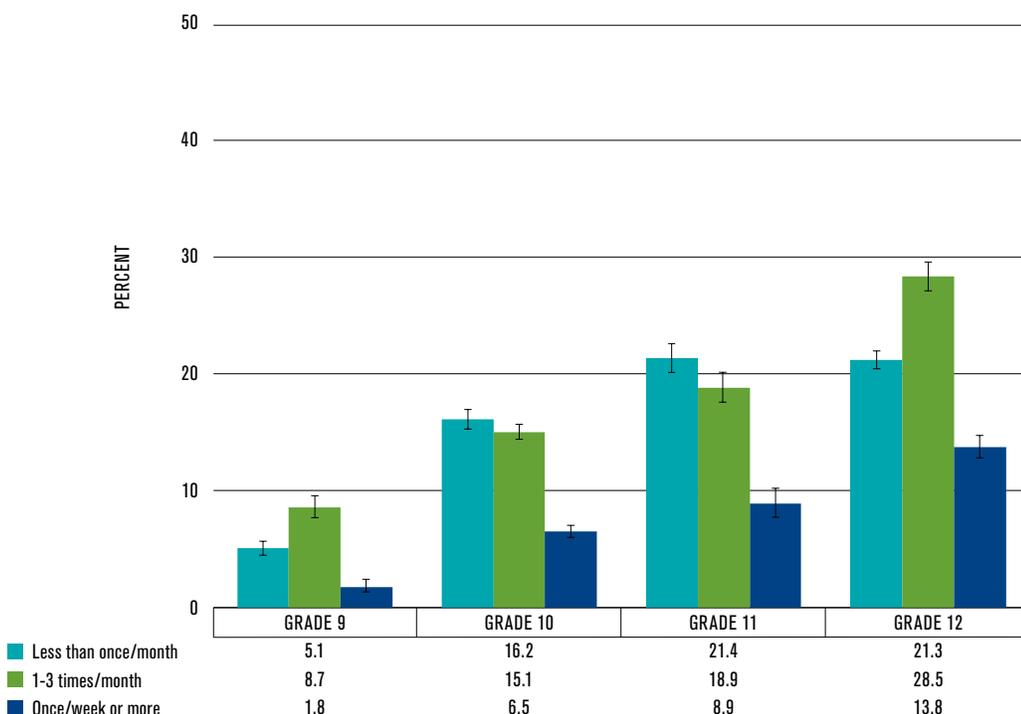
students reported binge drinking at least once in the last 12 months and 35.3% once a month or more.

In 2014:

- Binge drinking rates were significantly higher in males (45.8%) than in females (39.7%)
- The prevalence of binge drinking increased with increasing grade level, from 15.5% of students in Grade 9 to 63.6% of students in Grade 12.
- The median age at which students in Grades 9 to 12 first had five or more drinks was 15 years old.

Data for Grades 7 and 8 was suppressed due to small numbers.

BINGE DRINKING, PEI, GRADES 9 TO 12, 2014





In 2014, 42.8% of students in Grades 9 to 12 reported binge drinking at least once in the last 12 months and 26.3% reported binge drinking once a month or more. Binge drinking rates were significantly higher in males than in females.

Corresponding Survey Questions:

In the last 12 months, how often did you have 5 or more drinks of alcohol on one occasion?

Methodology:

Data was analyzed using survey weights to adjust for sampling methods and to produce population-based estimates

Definition:

Binge drinking is defined as drinking five or more drinks on a single occasion.

Data Source:

Canadian Student Tobacco, Alcohol and Drug Survey (CSTADS)

References:

1. Stolle, M., Sack, P.-M. and Thomasius, R. (2009) Binge Drinking in Childhood and Adolescence: Epidemiology, Consequences, and Interventions, *Dtsch. Ärztebl. Int.*, 106, 323.



Cannabis Use

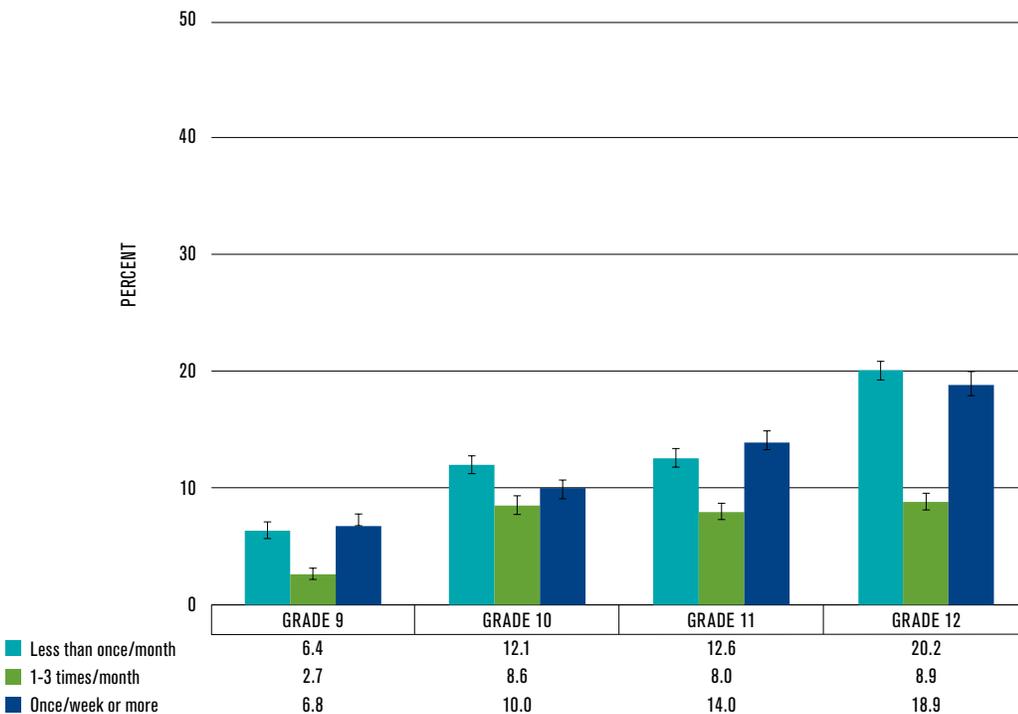
Cannabis use during adolescence is linked to reduced cognitive development, lower educational attainment, and is a predictor of cannabis dependence later in life.⁽¹⁾ The negative health and social outcomes of cannabis use are highest among daily users. In 2014, 33.1% of students in Grades 9 to 12 reported using cannabis at least once in the last 12 months and 12.7% reported using cannabis once a week or more. The prevalence of cannabis in this population has increased since 2008, when 24.1% of students reported using cannabis at least once in the last 12 months and 10.1% once a week or more.

In 2014:

- Cannabis use rates were significantly higher in males (38.5%) than in females (27.2%)
- The prevalence of cannabis use increased with increasing grade level, from 15.9% of students in Grade 9 to 48.0% of students in Grade 12.
- The median age at which cannabis users in Grades 9 to 12 first tried cannabis was 15 years old.

Data for Grades 7 and 8 was suppressed due to small numbers.

CANNABIS USE, PEI, GRADES 9 TO 12, 2014



**Corresponding Survey Question:**

In the last 12 months, how often did you use marijuana or cannabis?

Methodology:

Data was analyzed using survey weights to adjust for sampling methods and to produce population-based estimates

Data Source:

Canadian Student Tobacco, Alcohol and Drug Survey (CSTADS)

References:

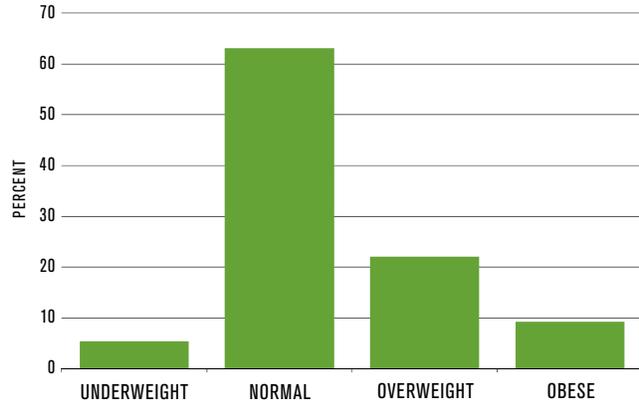
1. George, T. and Vaccarino, F. (Eds) *Substance abuse in Canada: The Effects of Cannabis Use during Adolescence*; Canadian Centre on Substance Abuse: Ottawa, ON, 2015.

BODY WEIGHT

Measured Body Mass Index (4 years)

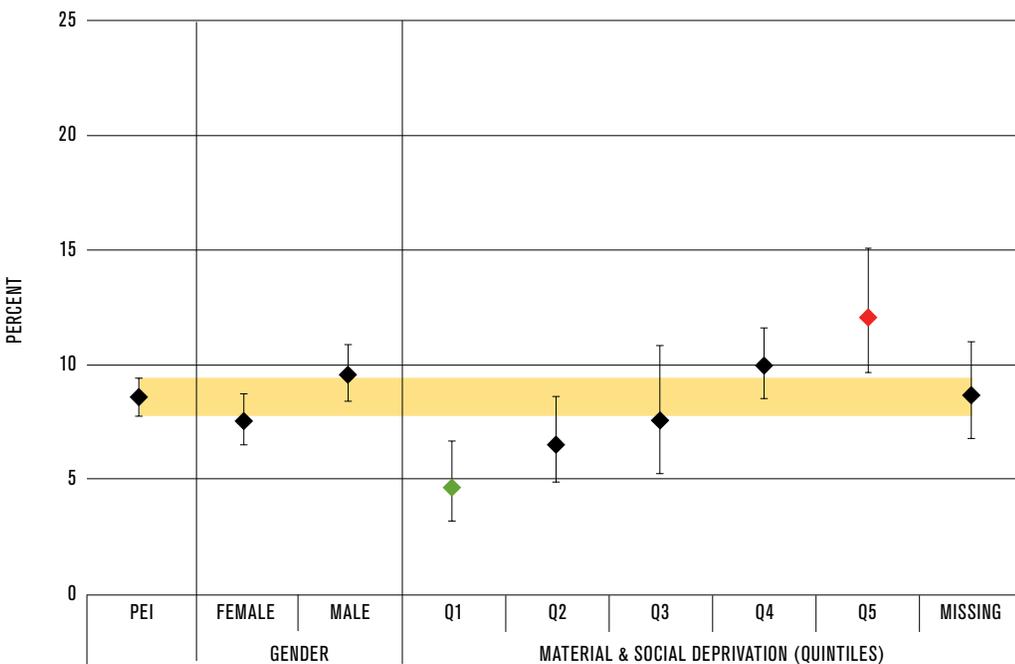
The rate of obesity in Canadian children and youth has seen a significant increase in the last 40 years.⁽¹⁾ Obesity is an important risk factor for chronic disease. Consequently, rates of obesity-related conditions, including type-2 diabetes and high cholesterol which are often thought to be diseases of adulthood, are increasingly being diagnosed in childhood.⁽¹⁾ What's more, obesity in children is linked to obesity in adulthood, further compounding the negative health effects of excess weight in childhood.⁽¹⁾

BODY MASS INDEX CATEGORIES BASED ON MEASURED HEIGHT AND WEIGHT, PEI, AGES 43-54 MONTHS, 2013 - 2017



Body weight categories are determined by a Body Mass Index (BMI) which was calculated using measurements of height and weight taken during the 4-year Child Health Clinics provided by Public Health Nursing. Weight charts based on the World Health Organization's growth reference charts were used to classify respondents into BMI categories.⁽²⁾ Over the five year period of 2013 to 2017, the average obesity rate among 4-year olds in PEI was 9 out of 100 children. Children with the most deprivation were significantly more likely to be obese, while children with the most privilege were significantly less likely to be obese.

MEASURED OBESITY, PEI, AGES 43 TO 54 MONTHS, 2013 - 2017



Methodology:

Data from 2013 to 2017 were combined to create a large enough sample size to produce reliable estimates with stratification and to have enough power to detect statistically significant differences.

Missing data for Material and Social Deprivation occurred in 16% of observations.

Definitions:

Body weight categories based on measured Body Mass Index and the World Health Organization Child Growth Standards⁽⁹⁾ as follows:

- Underweight: Z scores -3 to -1 standard deviation (SD)
- Normal weight: Z scores -1 to 1 SD
- Overweight: Z scores 1 to 2 SD
- Obese: Z scores 2 to 3 SD

Material and Social Deprivation Index is a marker of inequalities, and a socioeconomic proxy. The deprivation index is structured so that quintile 5 indicates most deprived, while quintile 1 indicates most privileged. For more information about the Index, refer to Page 4.

Data Source:

Health PEI Public Health Nursing

References:

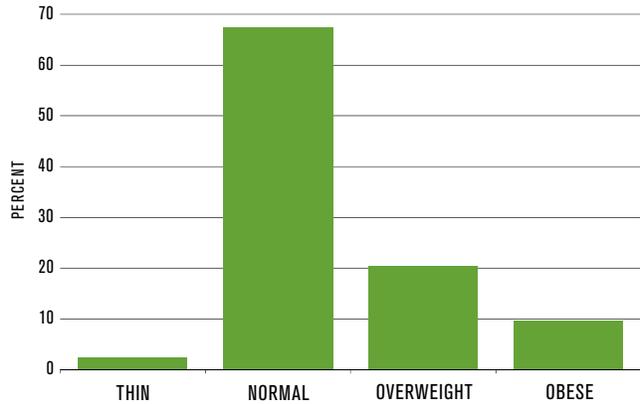
1. Rao, D. P., Kropac, E., Do, M. T., et al. (2016) Childhood overweight and obesity trends in Canada, *Health Promot. Chronic Dis. Prev. Can. Res. Policy Pract.*, 36, 194.
2. Onis, M. (2006) WHO Child Growth Standards based on length/height, weight and age, *Acta Paediatr.*, 95, 76-85.
3. WHO | The WHO Child Growth Standards <http://www.who.int/childgrowth/en/> (accessed Sep 5, 2017).



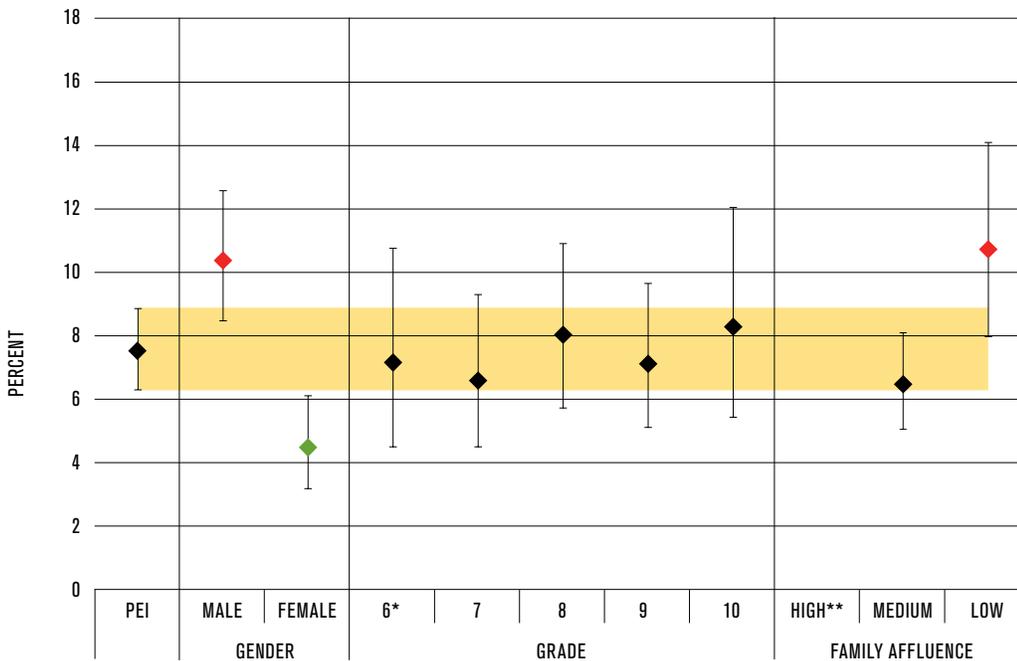
Self-Reported Obesity

Obesity is measured by a Body Mass Index (BMI) which was calculated using self-reported measures of height and weight. BMI categories were determined using international BMI standards for young people adopted by the International Obesity Task Force (IOTF).⁽¹⁾ Based on current data, both male students and students with low family affluence are more likely to be obese compared to the overall population of Grade 6 to 10 students in PEI. Females are less likely to be obese. Caution is indicated when interpreting these findings as self-reported height and weight has been shown to underestimate the prevalence of obesity.⁽²⁾ Furthermore, missing data, common in self-reported height and weight questions, occurred in 18% of respondents.

BODY MASS INDEX CATEGORIES BASED ON SELF-REPORTED HEIGHT AND WEIGHT, PEI, GRADES 6 TO 10, 2014



STUDENTS IN OBESE BODY MASS INDEX CATEGORY BASED ON SELF-REPORTED HEIGHT AND WEIGHT, PEI, GRADES 6 TO 10, 2014



* To be interpreted with caution due to high sampling variability.
 **Values suppressed as the estimate was considered too unreliable to be published.

Corresponding Survey Questions:

How much do you weigh?
How tall are you?

Methodology:

Data was weighted to population levels on grade level and county.

Definitions:

BMI Categories were determined using international BMI standards for young people adopted by the International Obesity Task Force (IOTF).⁽¹⁾

Family Affluence Scale is a measure of material affluence, a proxy for socioeconomic status. It is based on a series of six questions assessing common material assets and activities. Responses to these questions are scored and summed, and the overall Family Affluence Score is used to categorize the HBSC respondents in the lowest 20% (low affluence), middle 60% (medium affluence), and highest 20% (high affluence) groups. For more information about the Index, refer to Page 5.

Data Source:

Health Behaviour of School-Aged Children (HBSC) survey

References:

1. World Obesity Federation | New child cut-offs <http://www.worldobesity.org/data/cut-points-used/newchildcutoffs/> (accessed Sep 5, 2017).
2. Shields, M., Gorber, S. C. and Tremblay, M. S. (2008) Estimates of obesity based on self-report versus direct measures, *Health Rep.*, 19, 61.





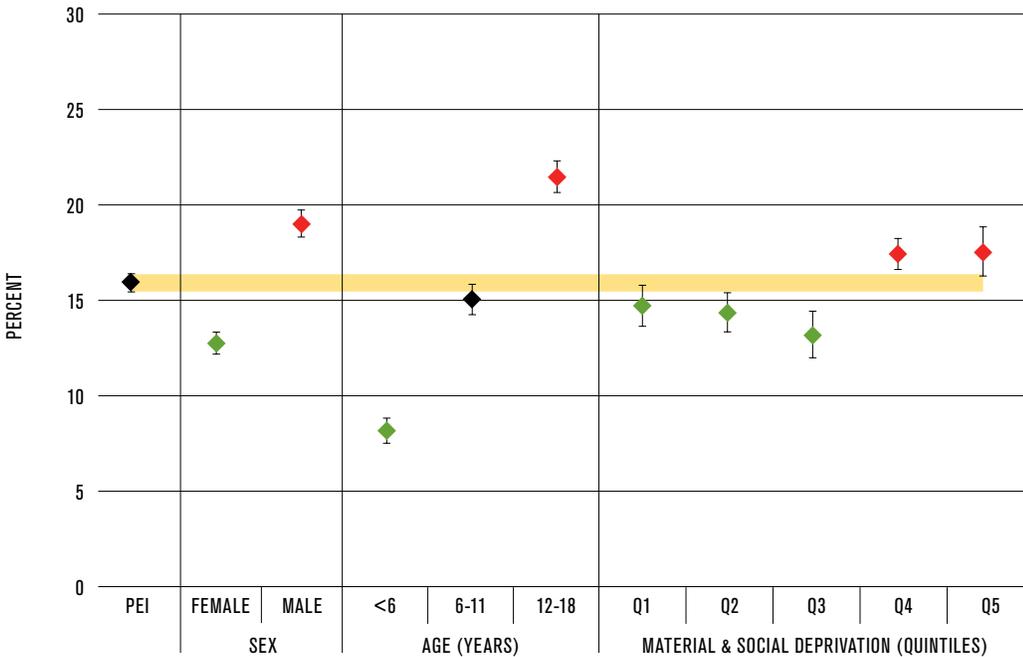
ASTHMA =

Asthma is a “chronic inflammatory disease of the airway”.⁽¹⁾ It is characterized by inflammation (redness and swelling of the inside lining of the airways), bronchospasm (a tightening of the muscles surrounding the airways), and excess mucus production in the small airways of the lungs.⁽²⁾ Asthma symptoms are different from person to person and can change overtime but may include episodes of coughing, shortness of breath, chest tightness, and wheezing.⁽³⁾ Asthma can't be cured but it can usually be controlled by minimizing exposure to allergens and irritants and by proper

use of medication.⁽²⁾ In children, asthma is the most common chronic disease⁽⁴⁾ and is a leading cause of missed school days and hospital visits.⁽⁵⁾ Historically, children in PEI have had a higher prevalence of asthma than Canada.⁽⁶⁾

In 2014/15, about 1 in 6 Island children (ages 1 to 18) had asthma. Asthma was more common in male children and in children from 12 to 18 years of age and was less common in female children and in children under 6 years of age. Children with high deprivation were more likely to have asthma, while children with high privilege were less likely to have asthma.

PREVALENCE OF ASTHMA, CRUDE RATES, PEI, AGES 1 TO 18, 2014/15



**Methodology:**

Asthma rates were calculated using the Canadian Chronic Disease Surveillance System (CCDSS) methodology.

Definition:

Material and Social Deprivation Index is a marker of inequalities, and a socioeconomic proxy. The deprivation index is structured so that quintile 5 indicates most deprived, while quintile 1 indicates most privileged. For more information about the Index, refer to Page 4.

Data Source:

PEI Discharge Abstract Database (DAD), PEI Physician Billing Claims and PEI Medicare Eligibility Registry

References:

1. Asthma Society of Canada What is Asthma? - About Asthma - The Asthma Society of Canada <https://www.asthma.ca/what-is-asthma/> (accessed Apr 5, 2017).
2. Allergy/Asthma Information Association AAIA Asthma InfoSheet 2014.
3. Government of Canada, P. H. A. of C. Asthma - Chronic Respiratory Diseases - Public Health Agency Canada <http://www.phac-aspc.gc.ca/cd-mc/crd-mrc/asthma-asthme-eng.php> (accessed Feb 25, 2014).
4. Schonberger, H. J. A. M. (2005) The PREVASC study: the clinical effect of a multifaceted educational intervention to prevent childhood asthma, *Eur. Respir. J.*, 25, 660-670.
5. US National Library of Medicine Asthma - children: MedlinePlus Medical Encyclopedia <https://medlineplus.gov/ency/article/000990.htm> (accessed Apr 5, 2017).
6. Public Health Agency of Canada Chronic Disease and Injury Indicator Framework Measures | Public Health Agency of Canada <http://infobase.phac-aspc.gc.ca:9600/PHAC/dimensionMembers.jsp?l=en&rep=i3212B12F133F4CE88AD13DB60CA37237&s#> (accessed Apr 5, 2017).



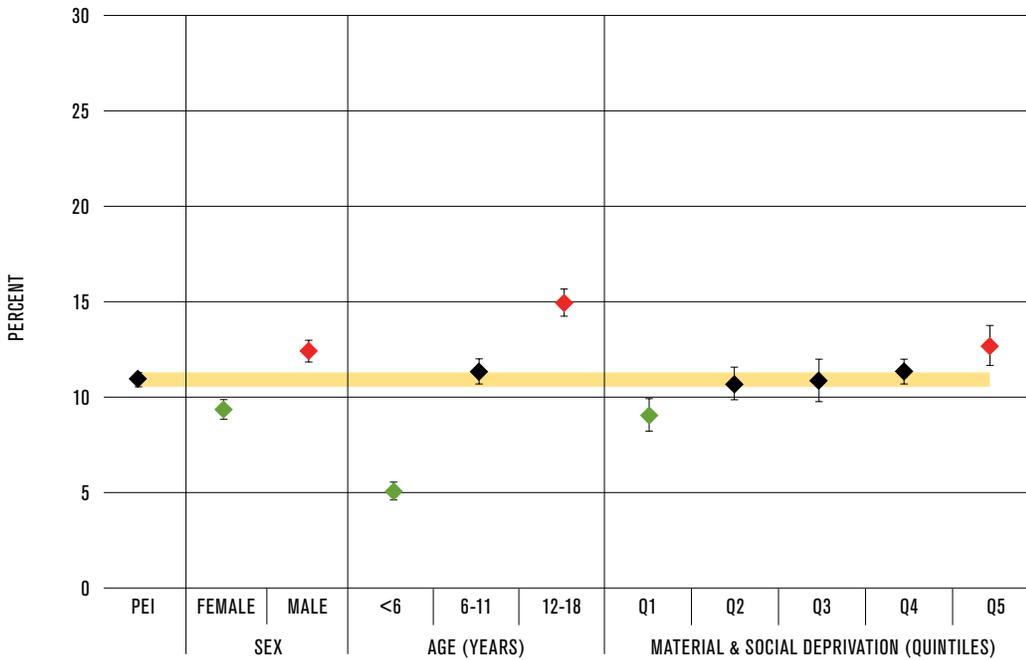
MENTAL ILLNESS 

Mental illnesses are characterized by alterations in thinking, mood or behavior that are associated with significant distress and impaired functioning.⁽¹⁾ They are caused by complex interactions between physical, psychological, social, cultural, and hereditary influences.⁽²⁾ There are many different types of mental illnesses, ranging from single, short-lived episodes to chronic disorders.⁽³⁾ Examples include depression, anxiety disorders, schizophrenia, eating disorders, and addictive behaviours.⁽⁴⁾ Among children and adolescents, the prevalence of the use of health services for mental illness has been increasing in Canada.⁽³⁾

Historically, the children in PEI have had a higher prevalence of use of health services for mental illness than Canada.⁽⁵⁾

About 1 in 10 Island children (ages 0 to 18) had health service utilization for mental illness in 2014/15. It was more common in male children and in children from 12 to 18 years of age and was less common in female children and in children under 6 years of age. Children with the highest deprivation were more likely to use health services for mental illness, while children with the highest privilege were less likely to use health services for mental illness.

ANNUAL PREVALENCE OF HEALTH SERVICE UTILIZATION FOR MENTAL ILLNESS, CRUDE RATES, PEI, AGES 0 TO 18, 2014/15



Children with the highest deprivation were more likely to use health services for mental illness, while children with the highest privilege were less likely to use health services for mental illness.

**Methodology:**

Health service utilization for mental illness rates were calculated using the Canadian Chronic Disease Surveillance System (CCDSS) methodology.

Definition:

Material and Social Deprivation Index is a marker of inequalities, and a socioeconomic proxy. The deprivation index is structured so that quintile 5 indicates most deprived, while quintile 1 indicates most privileged. For more information about the Index, refer to Page 4.

Data Source:

PEI Discharge Abstract Database (DAD), PEI Physician Billing Claims and PEI Medicare Eligibility Registry

References:

1. Government of Canada, P. H. A. of C. The Human Face of Mental Health and Mental Illness in Canada 2006 - Public Health Agency of Canada <http://www.phac-aspc.gc.ca/publicat/human-humain06/> (accessed Sep 18, 2013).
2. Merck Manual Consumer Version Mental Health Disorders <https://www.msdmanuals.com/home/mental-health-disorders> (accessed Apr 5, 2017).
3. Canada, P. H. A. of and Canada, P. H. A. of Report from the Canadian Chronic Disease Surveillance System: Mental Illness in Canada, 2015 <https://www.canada.ca/en/public-health/services/publications/diseases-conditions/report-canadian-chronic-disease-surveillance-system-mental-illness-canada-2015.html> (accessed Apr 5, 2017).
4. Mayo Clinic Mental illness <http://www.mayoclinic.org/diseases-conditions/mental-illness/basics/definition/con-20033813> (accessed Apr 5, 2017).
5. Public Health Agency of Canada Chronic Disease and Injury Indicator Framework Measures | Public Health Agency of Canada <http://infobase.phac-aspc.gc.ca:9600/PHAC/dimensionMembers.jsp?l=en&rep=i3212B12F133F4CE88AD13DB60CA37237&s#> (accessed Apr 5, 2017).



HEALTH CARE UTILIZATION

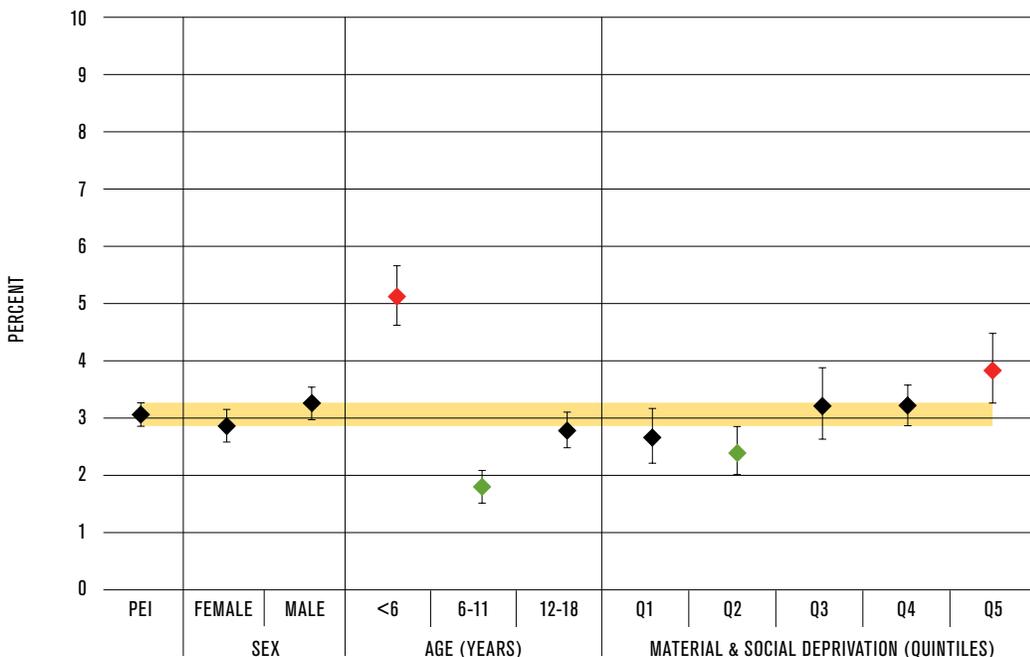
Acute Inpatient Hospitalization

Hospital-based acute inpatient care provides necessary treatment for a disease or severe episode of illness for a short period of time.⁽¹⁾ Acute inpatient care utilization is a common outcome measure in children's health services research.

In 2014/15, there were more than 1,100 acute inpatient visits for Island children (ages 0 to 18) in hospitals both in PEI and out of the province. About 3 in 100 Island children were hospitalized in acute inpatient care in 2014/15. Hospitalization was more common for children under the age of six and less common for children from six to eleven years of age. Children with the highest deprivation were more likely to be hospitalized while children with more privilege were less likely to be hospitalized.

Children with the highest deprivation were more likely to be hospitalized while children with more privilege were less likely to be hospitalized.

ACUTE INPATIENT HOSPITALIZATION RATES, CRUDE RATES, PEI, AGES 0 TO 18, 2014/15



**Methodology:**

Children with a valid PEI personal health card number in 2014/15 were included in the analysis. Hospital-based acute inpatient care visits, both in PEI and out of the province, with a discharge date within 2014/15 were included. Acute inpatient care visits with an admission date within 28 days of the patient's birth were excluded. Acute inpatient hospitalization rates were calculated per child; if a child had ≥ 1 acute inpatient hospitalization in 2014/15, they were assigned the hospitalization status.

Definition:

Material and Social Deprivation Index is a marker of inequalities, and a socioeconomic proxy. The deprivation index is structured so that quintile 5 indicates most deprived, while quintile 1 indicates most privileged. For more information about the Index, refer to Page 4.

Data Source:

Discharge Abstract Database (DAD) and PEI Medicare Eligibility Registry

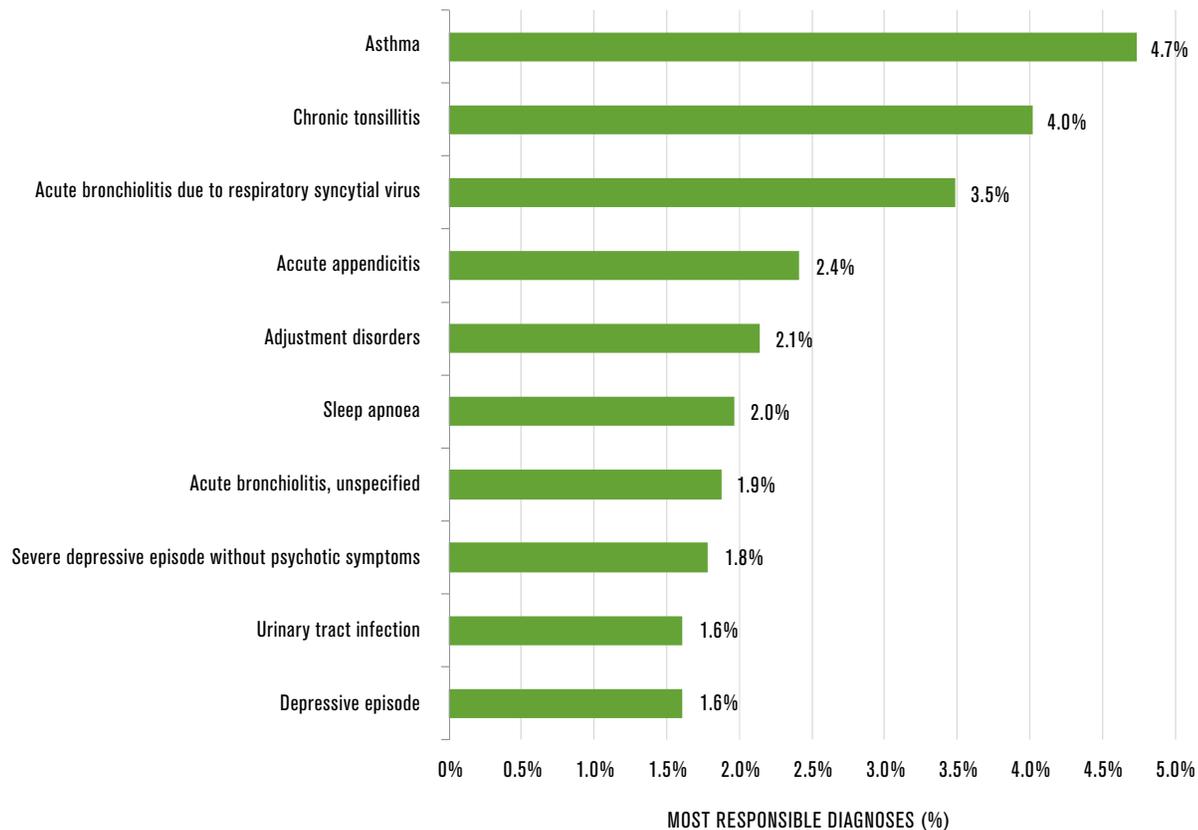
References:

1. Canadian Institute for Health Information Acute Care | CIHI <https://www.cihi.ca/en/acute-care> (accessed Apr 6, 2017).

Most Responsible Diagnoses Associated with Acute Inpatient Hospitalizations

Of the hospitalizations for Island children in 2014/15, the most frequent most responsible diagnosis was asthma (4.7% of most responsible diagnoses). The second most frequent was chronic tonsillitis (4.0%), followed by acute bronchiolitis due to respiratory syncytial virus (3.5%), acute appendicitis (2.4%), adjustment disorders (2.1%), and sleep apnoea (2.0%).

MOST FREQUENT MOST RESPONSIBLE DIAGNOSES, ACUTE INPATIENT HOSPITALIZATIONS, PEI, AGES 0 TO 18, 2014/15





Of the hospitalizations for Island children in 2014/15, the most frequent most responsible diagnosis was asthma (4.7% of most responsible diagnoses).

Methodology:

Hospital-based acute inpatient care visits, both in PEI and out of the province, with a discharge date within 2014/15 for children with a valid PEI personal health card number were included. Acute inpatient care visits with an admission date within 28 days of the patient's birth were excluded. The most frequent most responsible diagnoses of the acute inpatient hospitalizations were calculated per hospital visit; most responsible diagnoses were counted each time a child was in acute inpatient care.

Data Source:

Discharge Abstract Database (DAD) and PEI Medicare Eligibility Registry



Injury 

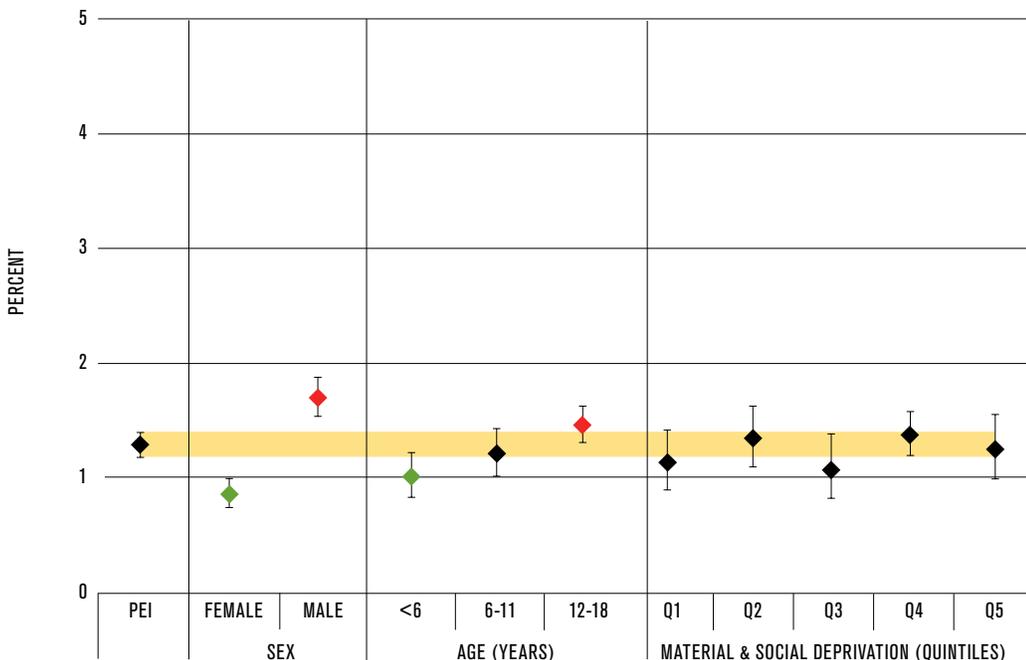
The impact of injury on children can be profound, as the quality of life lost for children who are hurt or disabled not only affects them, but also their families and communities, potentially for their whole lives.⁽¹⁾ In Canada, injuries are the leading cause of hospitalization and death for children.⁽²⁾

About 13 in 1,000 Island children were hospitalized with a most responsible injury diagnosis during the five-year time period from 2010/11 to 2014/15. Hospitalization associated with a most responsible injury diagnosis was more common for male children and in children from 12 to 18 years of age and was less common in female children and in children under 6 years of age. An association was

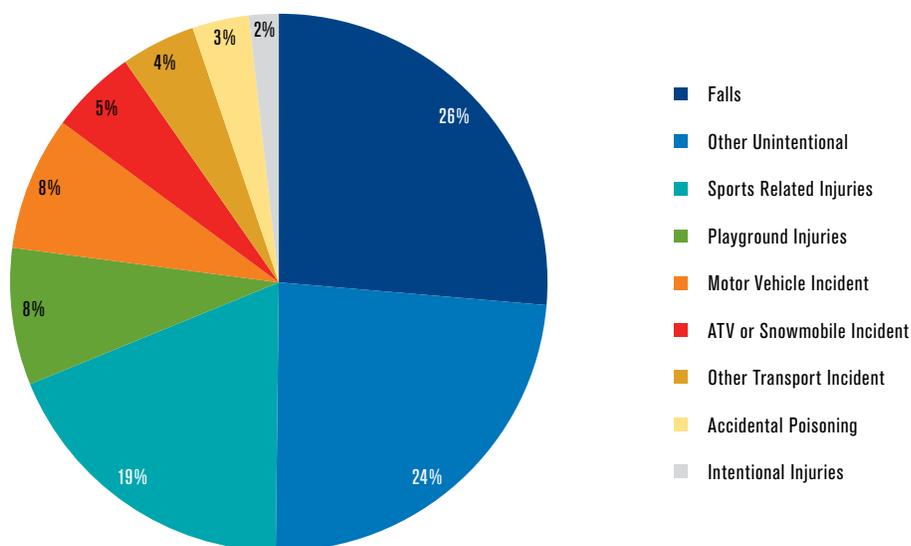
not detected between the rate of most responsible injury hospitalization and the deprivation quintile of Island children.

From 2010/11 to 2014/15, Island children (ages 0 to 18) had in excess of 550 acute inpatient visits where an injury was the most responsible diagnosis. The leading cause of the most responsible injury hospitalizations was falls, which accounted for 26% of the visits. The second leading cause was other unintentional injuries (e.g. bitten by an animal, submersion or drowning while in bath tub, and contact with knife; 24%), followed by sports-related injuries (19%), playground injuries (8%), and injuries from motor vehicle incidents (8%).

ACUTE INPATIENT HOPITALIZATION RATES FOR VISITS WITH A MOST RESPONSIBLE INJURY DIAGNOSIS, CRUDE RATES, PEI, AGES 0 TO 18, 2010/11 - 2014/15



CAUSES OF INJURY ASSOCIATED WITH MOST RESPONSIBLE INJURY DIAGNOSES, ACUTE INPATIENT HOSPITALIZATIONS, PEI, AGES 0 TO 18, 2010/2011 - 2014/2015



Methodology:

Children with a valid PEI personal health card number in 2010/11 to 2014/15 were included in the analysis. Hospital-based acute inpatient care visits, both in PEI and out of the province, with a discharge date within 2010/11 to 2014/15 and a most responsible injury diagnosis were included. Hospital day surgery visits were excluded. Data from 2010/11 to 2014/15 were combined to create a large enough sample size to produce reliable estimates with stratification and to have enough power to detect statistically significant differences. Acute inpatient injury hospitalization rates were calculated per child; if a child had ≥ 1 acute inpatient injury hospitalization within the five year time period, they were assigned the injury hospitalization status. The causes of acute inpatient injury hospitalizations were calculated per hospital visit; causes were counted each time a child was hospitalized with a most responsible injury diagnosis.

Definition:

Material and Social Deprivation Index is a marker of inequalities, and a socioeconomic proxy. The deprivation index is structured so that quintile 5 indicates most deprived, while quintile 1 indicates most privileged. For more information about the Index, refer to Page 4.

Data Source:

Discharge Abstract Database (DAD) and PEI Medicare Eligibility Registry

References:

1. Piedt, S., Rajabali, F., Turcotte, K., et al. The British Columbia Casebook for Injury Prevention. BC Injury Research and Prevention Unit: Vancouver, BC 2015.
2. Parachute Preventing Injuries. Saving Lives. <http://www.parachutecanada.org/child-injury-prevention?gclid=CLJP88X9j9MCFYePswodjIAK> (accessed Apr 6, 2017).

HEALTHY CHILDHOOD DEVELOPMENT

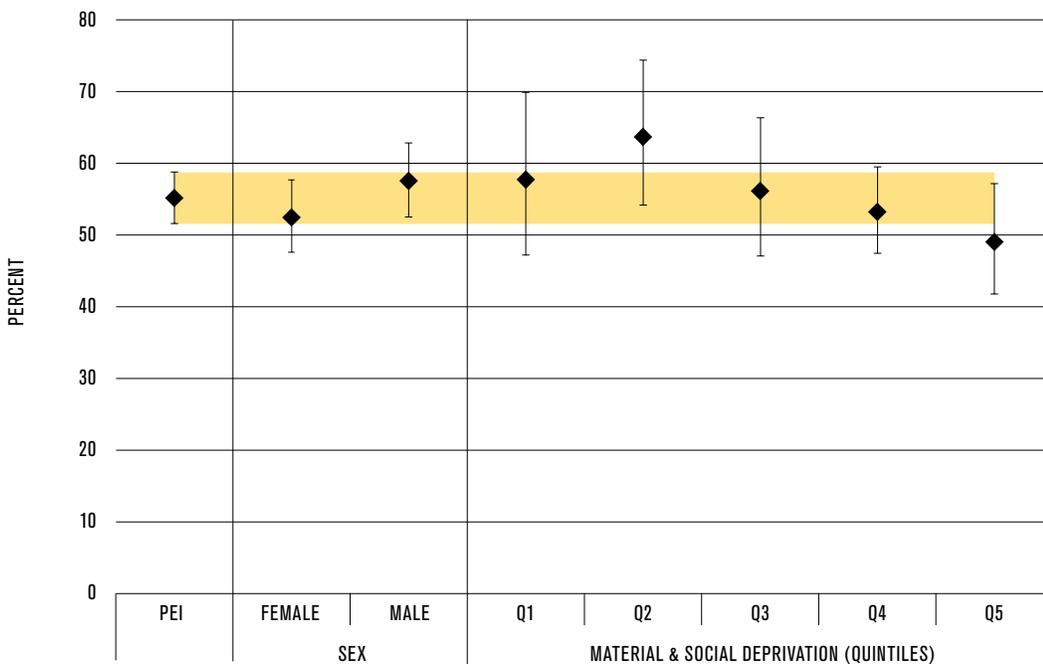
BEST START

Best Start is a voluntary in-home visiting program that identifies and provides services to Island families with children who face challenges and could benefit from additional support. Best Start is initiated with a Best Start Screen which is offered by Health PEI public health nurses to all newborns and their families typically within two weeks of birth. A Best Start Screen can be offered prenatally and can be reoffered up to four months of age if it was originally declined. The Best Start Screen is used to identify families that are at increased risk for social, health, economic and educational challenges. Families with a positive Best Start Screen are offered a Best Start Assessment. The goal of the Best Start Assessment is to identify families that are in need for some or all of the services provided by the Best Start Program. For families that would benefit from the Best Start Program, Best Start workers are offered to provide

extra support to the child and family for up to three years. Families receive help in areas such as physical care of the child, nutrition, breastfeeding, and parent-child activities.⁽¹⁾

From 2012/13 to 2016/17, PEI public health nurses conducted just under 4,800 Best Start Screens for Island children and their families. During this time period, a yearly average of about 1 in 3 of the Best Start Screens were positive, meaning 1/3rd of the children's families faced challenges and were eligible for the Best Start Assessment. Of the eligible children, Best Start Assessments were refused by more than half of the families overall (54.5%). A significant difference in Best Start Assessment refusal rates was not observed based upon the sex of the children. The refusal rates did tend to be higher for children with more privilege compared to children with the most deprivation but the rates did not significantly differ from the overall refusal rate.

BEST START ASSESSMENT REFUSAL, PEI, 2012/13 - 2016/17





Of the Best Start Assessments conducted by the public health nurses, 97.6% were positive (761/780 assessments) and 97.6% of the children and their families were referred to the Best Start Program for extra support (761 referrals/780 assessments). In total, from 2012/13 to 2016/17, 16.1% of the Island children and their families who did the Best Start Screen and/or Assessment were referred for extra support (773 referrals/4,798 children). At the discretion of the public health nurses, 14 referrals were made following negative Best Start Assessments or Best Start Assessment refusals (e.g. family requested referral as previous child had referral).

Methodology:

Children with a valid PEI personal health card number in 2012/13 to 2016/17 were included in the analysis. Data from the five year time period was combined to create a large enough sample size to produce reliable estimates with stratification and to have enough power to detect statistically significant differences.

Definition:

Material and Social Deprivation Index is a marker of inequalities, and a socioeconomic proxy. The deprivation index is structured so that quintile 5 indicates most deprived, while quintile 1 indicates most privileged. For more information about the Index, refer to Page 4.

Data Source:

Health PEI Public Health Nursing Best Start Program

References:

1. PEI Department of Education, Early Learning and Culture Best Start Program <https://www.princeedwardisland.ca/en/information/education-early-learning-and-culture/best-start-program> (accessed Jun 26, 2017).

AGES & STAGES QUESTIONNAIRES® (18 MONTHS)

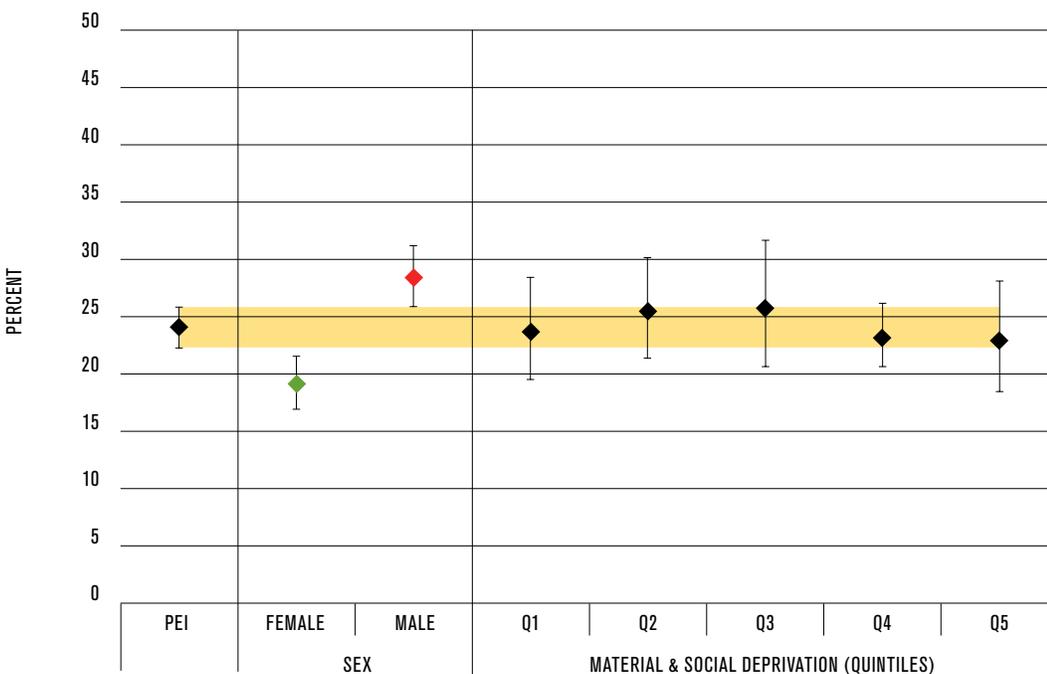
Skills such as walking, saying several words, pointing to a body part, and playing simple pretend games are called developmental milestones and are examples of what most children can do by 18 months of age.⁽¹⁾ While children develop at their own pace, not meeting the milestones for their age can indicate developmental delay. It has been shown that early intervention can significantly benefit children affected with a developmental delay, so routine screening of young children has been recommended.⁽²⁾ In December 2011, PEI Public Health Nursing introduced the Ages and Stages Questionnaires, Third Edition (ASQ-3™) into the 18-month Child Health Clinics to screen for developmental delay.

The ASQ-3 is a validated developmental screening measure that relies on parents to observe their child and to complete a simple questionnaire

about their child's abilities. The ASQ-3 screens six domains, specifically communication, gross motor, fine motor, problem solving, personal-social, and parental concerns. If a child does not meet ASQ-3 expectations on one or more domains, then the screen is positive and the child requires referral for further assessment. If a child has an ASQ-3 score in the monitoring zone on one or more domains, they may benefit from some targeted intervention, such as activities they can do at home to practice skills, and will be offered follow-up screening.^(3, 4)

From 2014/15 to 2016/17, more than 2,900 Island children were screened by the 18 Month ASQ-3 for their first time and about 1 in 4 children either did not meet ASQ-3 expectation (5.8% of children) or were in the monitoring zone (17.8%) in at least one domain. They were more often male children and less often female children but no significant difference was found based upon the deprivation index of the child.

CHILDREN WHO DID NOT MEET ASQ-3™ EXPECTATIONS OR WERE IN THE MONITORING ZONE, PEI, 2014/15 - 2016/17





Of the first time ASQ-3 18 Month Questionnaires, the domain in which most children did not meet ASQ-3 expectations or were in the monitoring zone was communication (13.2% of children). This was followed by problem solving (6.7% of children), personal-social (5.7%), fine motor (5.1%), gross motor (4.7%), and parental concern (2.7%).

Methodology:

Children with a valid PEI personal health card number in 2014-15 to 2016-17 were included in the analysis. Data from the three year time period was combined to create a large enough sample size to produce reliable estimates with stratification and to have enough power to detect statistically significant differences.

Definition:

Children who did not meet ASQ-3 expectations in a particular domain had an ASQ-3 score below the cutoff; whereas, children in the monitoring zone had an ASQ-3 score that was neither above nor below the cutoff.

Material and Social Deprivation Index is a marker of inequalities, and a socioeconomic proxy. The deprivation index is structured so that quintile 5 indicates most deprived, while quintile 1 indicates most privileged. For more information about the Index, refer to Page 4.

Data Source:

Health PEI Public Health Nursing ASQ-3 18 Month Questionnaire

References:

1. Centers for Disease Control and Prevention Developmental Disabilities - Facts about Developmental Disabilities <https://www.cdc.gov/ncbddd/index.html> (accessed Jun 28, 2017).
2. Veldhuizen, S., Clinton, J., Rodriguez, C., et al. (2015) Concurrent validity of the Ages and Stages Questionnaires and Bayley Developmental Scales in a general population sample, *Acad. Pediatr.*, 15, 231-237.
3. Schonhaut, L., Armijo, I., Schonstedt, M., et al. (2013) Validity of the Ages and Stages Questionnaires in Term and Preterm Infants, *PEDIATRICS*, 131, e1468-e1474.
4. ASQ News and Updates Kids in the monitoring zone: What to do next <http://agesandstages.com/free-resources/articles/kids-in-the-monitoring-zone/> (accessed Oct 25, 2017).

NUTRITION RISK – TODDLERS AND PRESCHOOLERS

Childhood nutrition is an important predictor of growth, development, and overall health. Nutrition risk is defined as “the presence of characteristics or risk factors that can lead to impaired nutritional status”.⁽¹⁾ NutriSTEP® (Nutrition Screening Tool for Every Preschooler) and Toddler NutriSTEP are validated, parent-administered screening tools used to identify nutrition risk. In October 2015, Toddler NutriSTEP (for ages 18-35 months) and NutriSTEP (for ages 3-5 years) were incorporated into the standard screening practice of the 18-month and 4-year Child Health Clinics (CHCs) at Public Health Nursing offices across PEI. The completed screens are reviewed by public health nurses during the CHCs to help identify families in need of additional nutrition information or referral to a dietitian and other health practitioners as required.

Preschoolers (3 to 5 years) in families in the most deprived quintile (Q5) were statistically more likely to be considered high nutrition risk than preschoolers overall

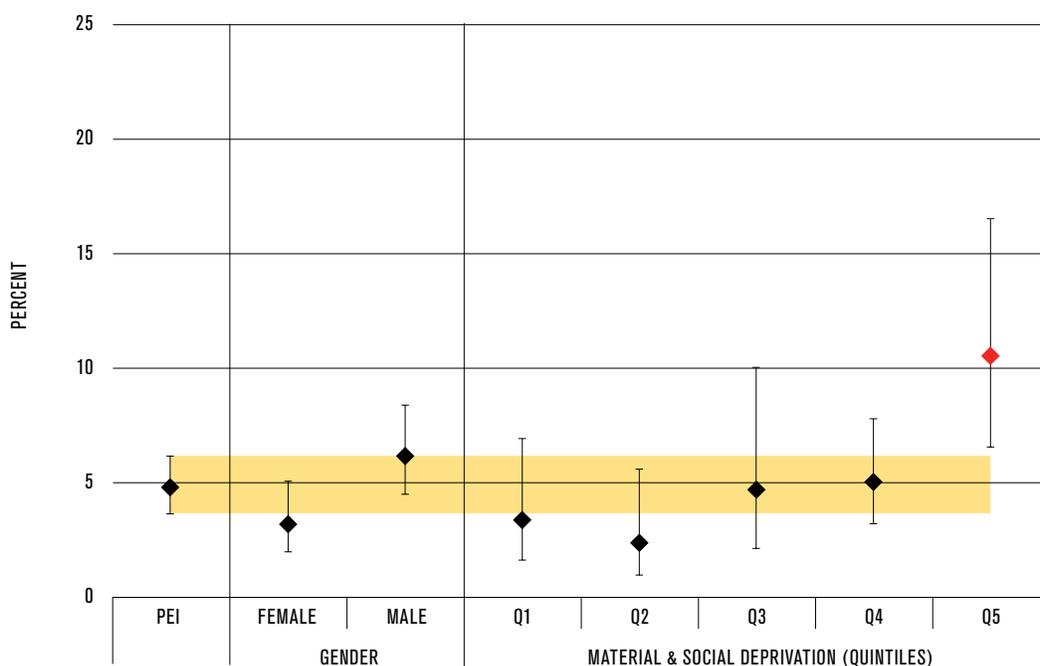


DISTRIBUTION OF NUTRITION RISK LEVELS AMONG PEI CHILDREN AT THE 18-MONTH AND 4 YEAR CHILD HEALTH CLINICS, PEI, 2016

NutriSTEP Screening Tool	Nutrition Risk Level		
	Low	Moderate	High
Toddler (18-35 months)	94.7%	3.8%	1.5%
Preschooler (3-5 years)	85.3%	10.0%	4.8%

The prevalence of high nutrition risk among toddlers (18 to 35 months) was very low; as such no differences were detected based on gender or deprivation index. Preschoolers (3 to 5 years) in families in the most deprived quintile (Q5) were statistically more likely to be considered high nutrition risk than preschoolers overall and high nutrition risk was more prevalent in males than in females.

CHILDREN AT HIGH RISK FOR NUTRITION AND LIFESTYLE-RELATED PROBLEMS, PEI, PRESCHOOLERS, 2016



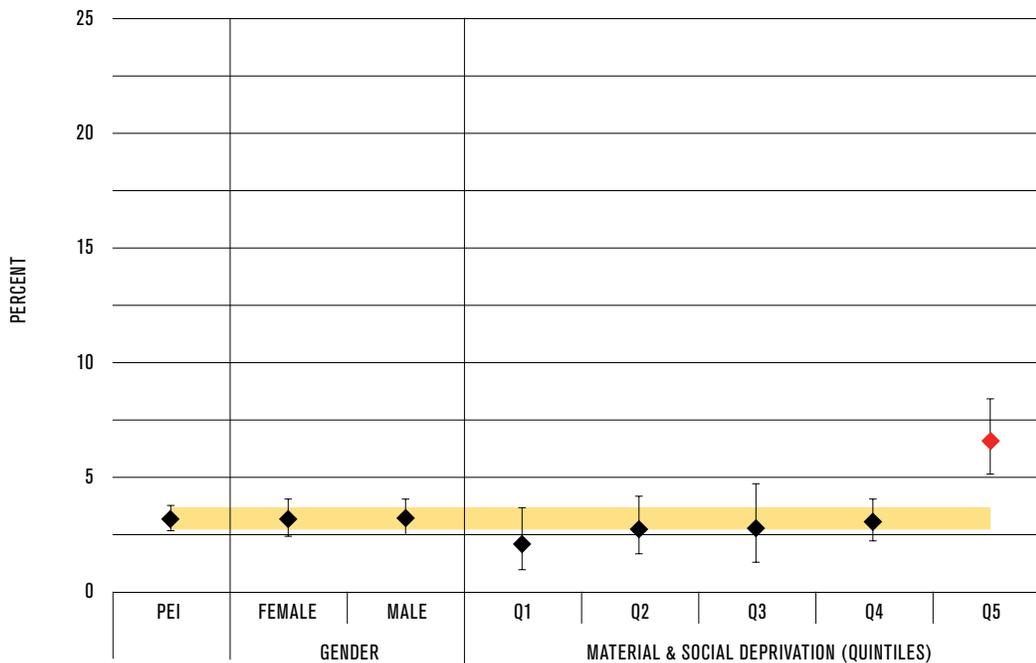
Food Insecurity

An important risk factor for under-nutrition is food insecurity, which can be defined as the inability to purchase adequate quantity or quality of food for all members of a family due lack of resources.

⁽²⁾ When asked about their ability to purchase food, 15.2% of parents of toddlers and 12.7% of parents of preschoolers replied that they had difficulty buying the food they want to feed their child at least some of the time. In the preschooler cohort, as the measure of social and material deprivation increased, the risk of food security increased, from 8.2% of preschoolers of families in the most privileged quintile (Q1) to 26.3% of preschoolers in the most deprived quintile (Q5).



CHILDREN IN FAMILIES THAT REPORT DIFFICULTY BUYING FOOD DUE TO EXPENSE AT LEAST SOMETIMES, PEI, PRESCHOOLERS, 2016



Screen Time 

Excess screen time promotes sedentary behaviour and is associated with obesity in childhood.⁽³⁾ Based on evidence and expert consensus of the potential benefits and risks of screen time on developmental, psychosocial and physical health, the Canadian Pediatric Society (CPS) does not recommend screen time for children under the age of two. For children aged 2 to 5 years, the CPS recommends that screen time should be limited to less than 1 hour per day.⁽³⁾ Based on responses to

the 2016 PEI NutriSTEP Toddler questionnaire, 46.5% of toddlers had more than the CPS recommended screen time limits. Exposure to excess screen time increased in the preschool years. Based on responses to the 2016 PEI NutriSTEP Preschooler questionnaire, 58.0% of preschoolers had more than the recommended screen time limits (note: the CPS guidelines were updated in 2017; prior to the update, the guideline for children 5 years of age was less than 2 hours of screen time per day).

46.5% of toddlers and 58.0% of preschoolers had more than the recommended screen time limits.

Definitions:

Toddler cohort: Children presenting to Public Health Nursing for the 18 to 35 month Child Health Clinic; median age 19 months (range 18 to 35 months).

Preschooler cohort: Children presenting to Public Health Nursing for the 3 to 5 year Child Health Clinic; median age 4 years (range 3 to 5 years).

Material and Social Deprivation Index is a marker of inequalities, and a socioeconomic proxy. The deprivation index is structured so that quintile 5 indicates most deprived, while quintile 1 indicates most privileged. For more information about the Index, refer to Page 4.

Data Source:

Health PEI Public Health Nursing NutriSTEP Toddler and Preschooler

References:

1. Randall Simpson, J. A., Keller, H. H., Rysdale, L. A., et al. (2008) Nutrition Screening Tool for Every Preschooler (NutriSTEP): validation and test-retest reliability of a parent-administered questionnaire assessing nutrition risk of preschoolers, *Eur. J. Clin. Nutr.*, 62, 770–780.
2. Hager, E. R., Quigg, A. M., Black, M. M., et al. (2010) Development and Validity of a 2-Item Screen to Identify Families at Risk for Food Insecurity, *PEDIATRICS*, 126, e26–e32.
3. Screen time and young children: Promoting health and development in a digital world | Position statements and practice points | Canadian Paediatric Society <http://www.cps.ca/en/documents/position/screen-time-and-young-children> (accessed Jun 21, 2017).



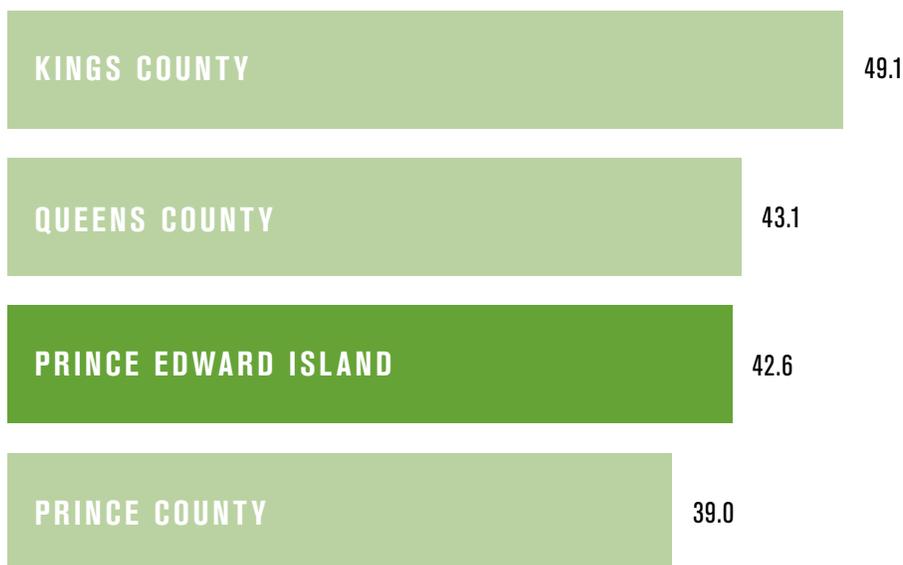
COGNITIVE DEVELOPMENT

CHILDREN IN LICENSED CHILDCARE CENTRES

High quality early childhood environments have been repeatedly shown to be a cost savings investment. Investment in high quality early years programming can have economic benefits in the long run, with a return of between \$4 and \$17 for each \$1 spent.⁽¹⁾ In Quebec, low-fee childcare has been shown to be associated with an increase in female employment, resulting in an increase in tax revenue and reductions in family support payments of \$1.05 for each \$1 invested.⁽²⁾ Children from disadvantaged backgrounds who attended high quality preschool programs had higher high school graduation rates, higher college attendance, increased lifetime earnings and lower rates of substance abuse and felony charges.⁽¹⁾

To support parents of young children in the workplace, the Organization for Economic Co-operation and Development (OECD) Directorate for Education has recommended that Canada continues to increase access and promote equity in early childhood education and care services.⁽³⁾ In 2016, 42.6% of children under the age of 5 years had access to a licensed childcare space. Licensed care coverage has remained consistent in recent years (42.6% in 2014 and 43.7% in 2015). Based on 2016 data, access to licensed childcare was significantly less in Prince County and significantly greater in Kings County than in PEI overall. With regards to infants specifically, in 2016, there were 297 licensed infant care spaces (care for children under 12 months of age) in Prince Edward Island and an estimated 1,307 infants, resulting in 22.7% of infants with access to regulated care.

PERCENTAGE OF CHILDREN FOR WHOM THERE IS A LICENSED CHILDCARE SPACE, PEI, AGES 0 TO 4, 2016



Based on 2016 data, access to licensed childcare was significantly less in Prince County and significantly greater in Kings County than in PEI overall. With regards to infants specifically, in 2016, there were 297 licensed infant care spaces (care for children under 12 months of age) in Prince Edward Island and an estimated 1,307 infants, resulting in 22.7% of infants with access to regulated care.

**Data Source:**

PEI Department of Education, Early Learning and Culture

Statistics Canada. Table 051-0001 - Estimates of population, by age group and sex for July 1, Canada, provinces and territories, annual (persons unless otherwise noted), CANSIM (database). (accessed: April 27, 2017)

Statistics Canada. Table 051-0062 - Estimates of population by census division, sex and age group for July 1, based on the Standard Geographical Classification (SGC) 2011, annual (persons), CANSIM (database). (accessed: April 27, 2017)

References:

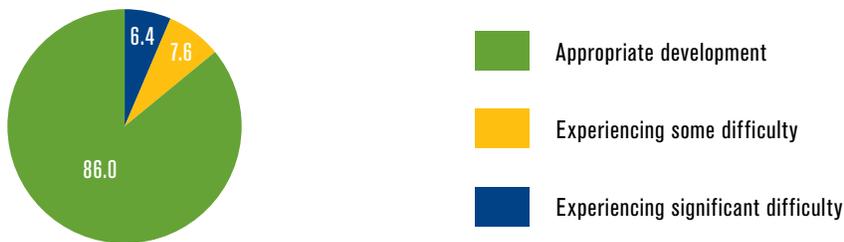
1. McCuaig, K., Bertrand, J. and Shanker, S. *Trends in early education and child care*; Atkinson Centre for Society and Child Development: Toronto, ON, 2012; p. 22.
2. Fortin, P., Godbout, L. and St-Cherny, S. *Impact of Québec's universal low fee childcare program on female labour force participation, domestic income, and government budgets*; Working Paper 2012/02; Université de Sherbrooke, 2012.
3. Organisation for Economic Co-operation and Development *Early Childhood Education and Care Policy, Country Note for Canada*; OECD.

EARLY YEARS EVALUATION

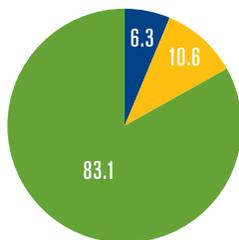
Early Years Evaluation (EYE) is an assessment tool that measures children's developmental skills in five areas: awareness of self and environment, cognitive skills, language and communication, gross motor development, and fine motor development. In PEI, children complete the EYE in the spring before they start kindergarten in September. Considering EYE results from 2014 to 2016, 2 in 5 kindergarten-aged children who completed the EYE did not meet the developmental milestones in at least one of the five skill areas. The area in which kindergarten-aged children had the most difficulty was fine motor development, with 1 in 5 experiencing some or significant difficulty.

EARLY YEARS EVALUATION RESULTS, PEI, AGE 5, 2014 - 2016

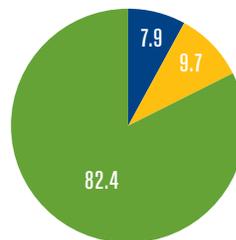
Awareness of self and environment



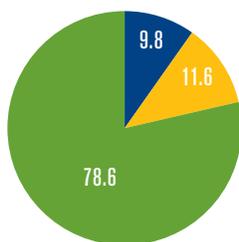
Language and communication



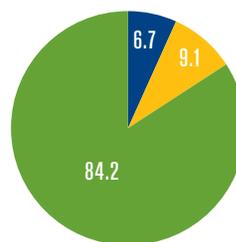
Cognitive skills



Fine motor skills



Gross motor skills



Data Source:

PEI Department of Education, Early Learning and Culture Early Years Evaluation (EYE)

SCHOOL ACHIEVEMENT

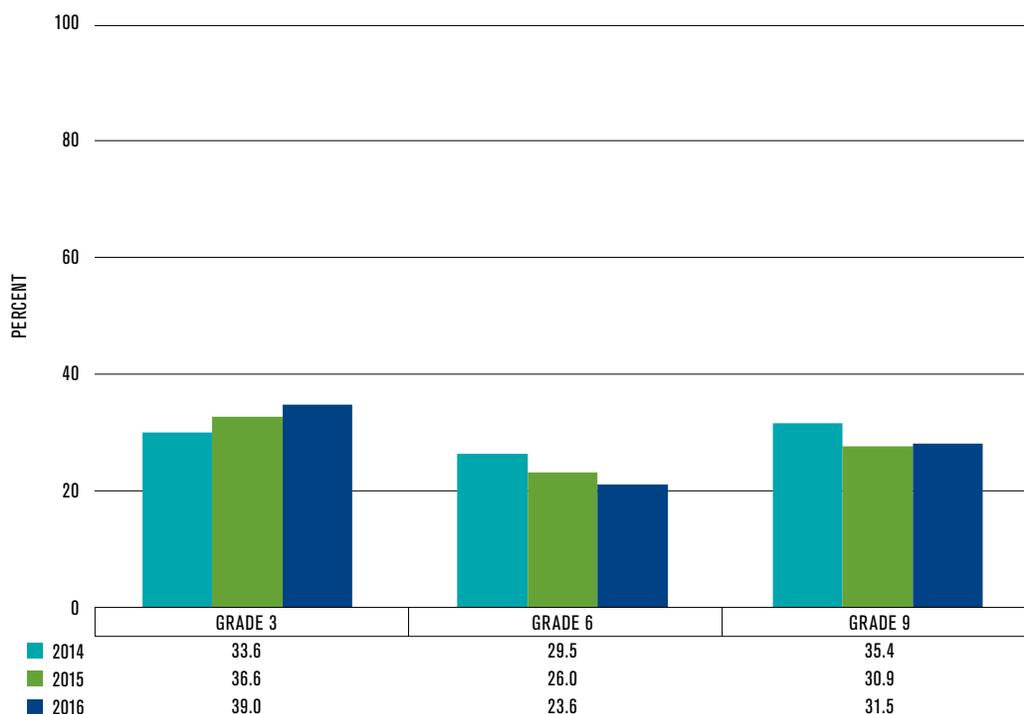
Provincial Common Assessments are based on the curriculum used in Island schools. Results of the assessments provide information on student performance from year to year. In PEI, provincial assessments measure literacy (in terms of reading comprehension and writing) and math skills at key stages of learning. Primary assessments occur at the end of Grade 3; elementary assessments occur at the end of Grade 6 (with the exception of French Immersion Elementary Literacy Assessments which occur at the end of Grade 5); intermediate assessments occur at the end of Grade 9. In 2016, the literacy component of the intermediate

assessments was discontinued in order to respond to the recommendation in the Secondary Principals' Report that the literacy assessment be moved to Grade 10. The new Secondary Literacy Assessment will be implemented during the 2018-2019 school year.

Math – Grades 3, 6, and 9

Provincial Assessment results from 2014-2016 show that difficulty in math is not uncommon among students in Grades 3, 6, and 9. In the 2015-2016 school year, the percentage of students not meeting expectations in math ranged from 24% in Grade 6 to 39% in Grade 3.

STUDENTS WHO DID NOT MEET EXPECTATIONS IN MATH, PEI, GRADES 3,6, AND 9, 2014 - 2016



Reading Comprehension – Grades 3, 5/6, and 9

Provincial Assessment results from 2014-2016 show that reading comprehension can also be challenging for PEI students. In the 2015-2016 school year, the percentage of students not meeting expectations in reading comprehension ranged from 18% in Grade 6 of the English program to 44% in Grade 5 of the French Immersion program.

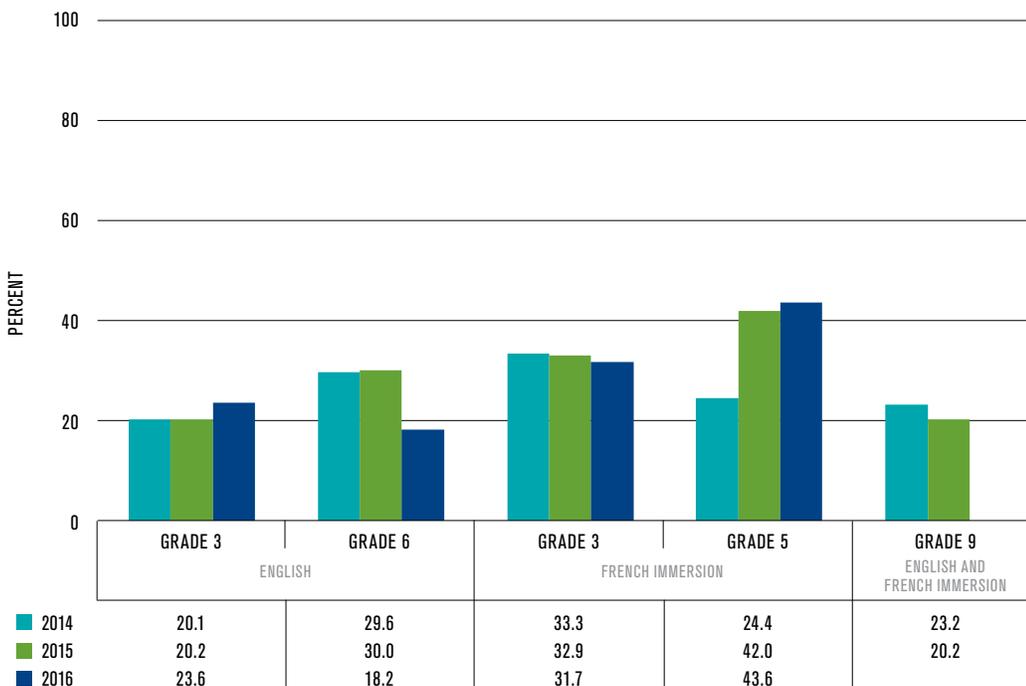
Students in the English and French Immersion programs write Primary and Elementary Literacy Assessments based on each unique curriculum; therefore results for these programs are not directly comparable.

The Intermediate Literacy Assessment was discontinued in 2016 and will be replaced with the Secondary Literacy Assessment (Grade 10) in the 2018-2019 school year.

Writing – Grades 3, 5/6, and 9

According to the Provincial Assessment results from 2014-2016, writing is generally the assessment area in which PEI students are having the most difficulty. In the 2015-2016 school year, the percentage of students not meeting expectations in writing ranged from 34% in Grade 6 of the English program to 61% in Grade 5 of the French Immersion program.

STUDENTS WHO DID NOT MEET EXPECTATIONS IN READING COMPREHENSION, PEI, GRADES 3, 5/6, AND 9, 2014 - 2016

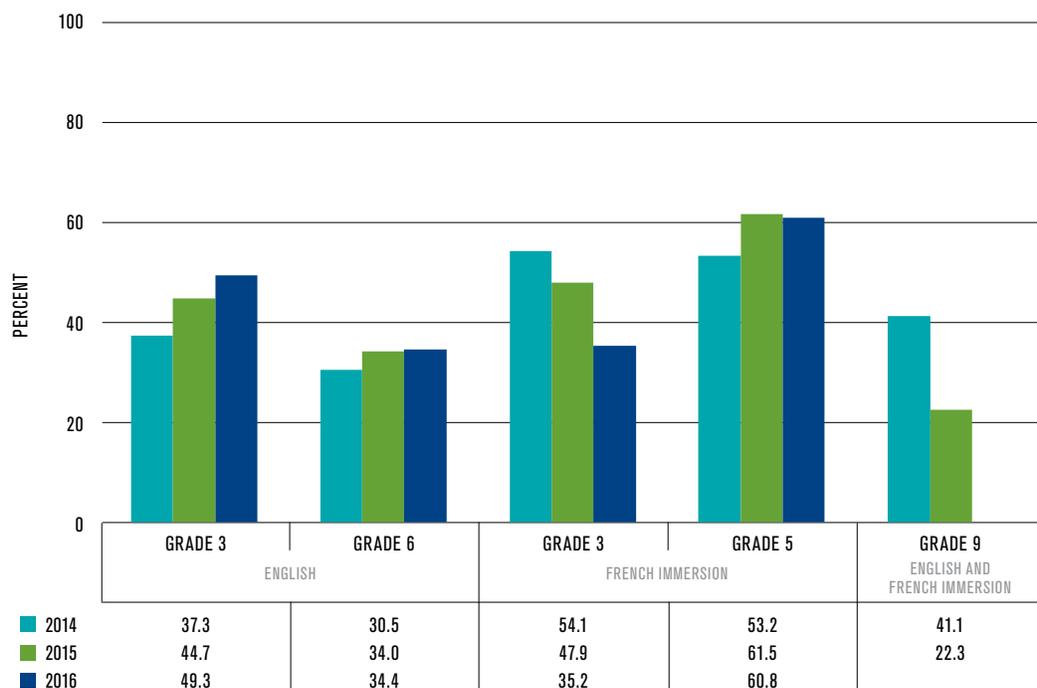


Students in the English and French Immersion programs write Primary and Elementary Literacy Assessments based on each unique curriculum; therefore results for these programs are not directly comparable.

The Intermediate Literacy Assessment was discontinued in 2016 and will be replaced with the Secondary Literacy Assessment (Grade 10) in the 2018-2019 school year.



STUDENTS WHO DID NOT MEET EXPECTATIONS IN WRITING, PEI, GRADES 3, 5/6, AND 9, 2014 - 2016



Data Source:
PEI Department of Education, Early Learning and Culture

SOCIAL ENVIRONMENT

FAMILY WITH CHILDREN

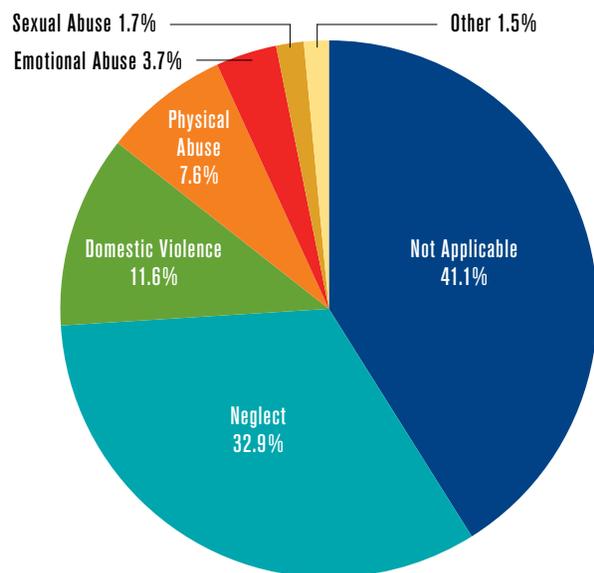
Child maltreatment is a major public health problem associated with impairment in childhood, adolescence, and extending throughout the lifespan.⁽¹⁾ “Child abuse or maltreatment constitutes all forms of physical and/or emotional ill-treatment, sexual abuse, neglect or negligent treatment or commercial or other exploitation, resulting in actual or potential harm to the child’s health, survival, development or dignity in the context of a relationship of responsibility, trust or power.”⁽²⁾

In PEI, Child Protection Services is responsible to help protect children from parental abuse and neglect. All Islanders must call Child Protection if they think a child is being abused or neglected by a parent.⁽³⁾ The number of child protection reports received for Island parents was 10,264 from 2014/15 to 2016/17. During this time, the most common major presenting maltreatment reported that was applicable to Child Protection Services was neglect (32.9% of child protection reports). Not applicable reports were redirected to other government or community resources.

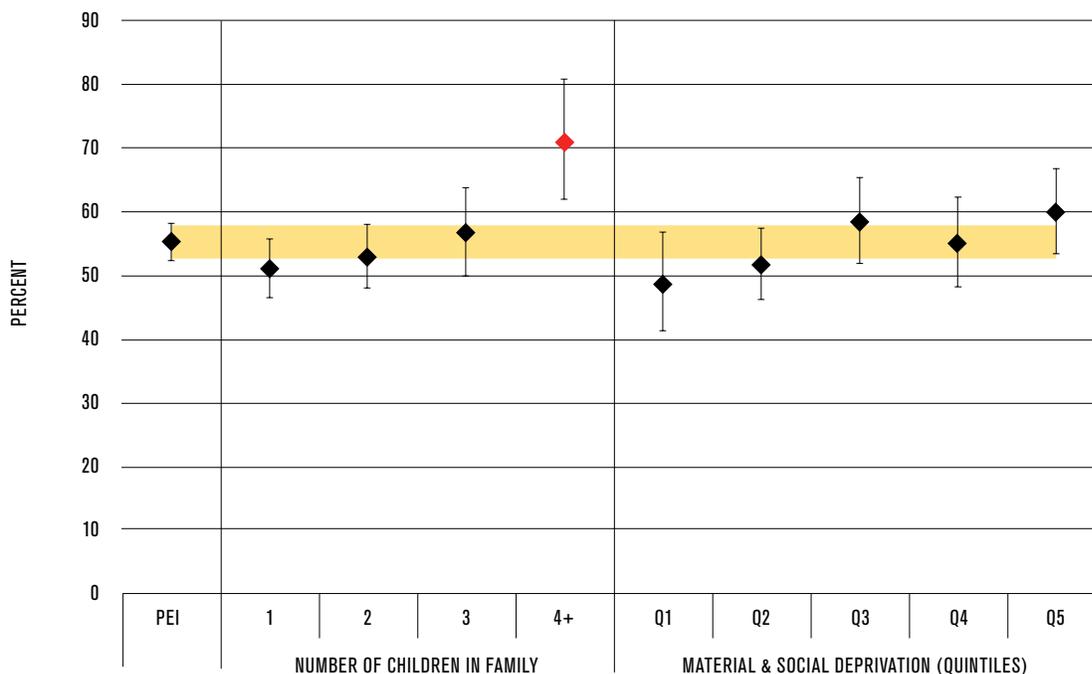
Parents with the most deprivation were significantly more likely to have more than 1 child protection report in 3 years (recidivism) than were parents with the most privilege.

The way maltreatment affects children depends upon factors such as the frequency and duration of maltreatment and the co-occurrence of multiple forms of maltreatment.⁽⁴⁾ In PEI from 2014/15 to 2016/17, child protection reports were received for 3,188 parents, with a range of 1 to 51 reports per parent. Of the parents that had child protection reports, 55.0% had more than one report in the three year time span (referred to here as “recidivism”). Compared to overall, a significantly higher rate of recidivism was observed for parents that had four or more children in the family. Recidivism was significantly higher for parents with the most deprivation compared to parents with the most privilege but the rates were not significantly different from the overall recidivism rate.

MAJOR PRESENTING MALTREATMENT, CHILD PROTECTION REPORTS, PEI, 2014/15 - 2016/17



RATE OF RECIDIVISM OF CHILD PROTECTION REPORTS PER PARENT, PEI, 2014/15 - 2016/17



Methodology:

Data from 2014/15 to 2016/17 were combined to analyze recidivism over the three-year time span. Child protection reports were excluded from the analysis if the postal code for the parent was missing or if the postal code was for an area outside of PEI (129 reports and 54 parents excluded in total). Three of the major presenting maltreatment categories were formed from the grouping of similar major presenting problems from the child protection reports as follows: neglect included neglect, abandonment, failure to access treatment for child, lack of supervision, and refusal to resume custody; sexual abuse included exposure to/involvement in child porn, exploitation for prostitution, and sexual abuse; and other included past parenting, primary question not answered, and other. The number of children in the family was determined from the most recent child protection report for the parent from 2014/15 to 2016/17.

Definition:

A child protection report is created when PEI Child Protection Services receives a report of a child being abused or neglected by a parent or a child is at risk of being unsafe with their parent. Child protection reports are assessed by Child Protection Social Workers to determine if an investigation is required. When a child protection report falls outside of the authority of the Child Protection Act, the reports are called "Not Applicable" and are redirected to other government or community resources.

Material and Social Deprivation Index is a marker of inequalities, and a socioeconomic proxy. The deprivation index is structured so that quintile 5 indicates most deprived, while quintile 1 indicates most privileged. For more information about the Index, refer to Page 4.

Data Source:

PEI Family and Human Services, Child Protection

References:

1. Afifi, T., O. (2011) Child Maltreatment in Canada: An Understudied Public Health Problem, *Can J Public Health*, 102, 459-61.
2. Consultation on Child Abuse Prevention (1999: Geneva, Switzerland), World Health Organization. Violence and Injury Prevention Team and Global Forum for Health Research *Report of the Consultation on Child Abuse Prevention*, 29-31 March 1999, WHO, Geneva; Report on Consultation WHO/HSC/PVI/99.1; World Health Organization: Geneva, Switzerland, 1999.
3. Family and Human Services, Government of Prince Edward Island Child Protection <https://www.princeedwardisland.ca/en/information/family-and-human-services/child-protection> (accessed Jul 7, 2017).
4. Australian Institute of Family Studies Effects of child abuse and neglect for children and adolescents <https://aifs.gov.au/cfca/publications/effects-child-abuse-and-neglect-children-and-adolescents> (accessed Jul 7, 2017).

CHILDREN IN CARE

The goal of Child Protection Services is to help protect children from parental abuse and neglect. When an investigation finds a child in need of protection from parental harm and it is decided that the child requires out-of-home care to be safe, it may be possible for the child to live with other family members (a least intrusive plan). If that is not possible, the child enters the legal custody and guardianship of the Director of Child Protection and lives in a foster home or a group home. This is called “being in care”.^(1, 2)

During 2014/15 and 2015/16, there were 260 in care stays for children in PEI. In care stays were counted each time a child started a time in care; 68.1% of the in care stays were the first time in care for a child during the two year time period, 21.9% were the second time in care for a child and 10.0% were at least the third time in care. There were more in care stays in 2014/15 (60.8% of stays) and for children under the age of six (48.9%). There was almost equal distribution of in care stays between male and female children.

IN CARE STAYS, PEI, AGES 0 TO 18, 2014/15 - 2015/16

TOTAL IN CARE STAYS			
		Number	Percent
Year	2014/15	158	60.8
	2015/16	102	39.2
Sex	Female	127	48.9
	Male	133	51.2
Age Group	<6 years	127	48.9
	6-11 years	57	21.9
	12-18 years	76	29.2
In Care Stay per Child			
	1	177	68.1
	2	57	21.9
	3+	26	10.0
TOTAL		260	100.0

**Methodology:**

In care stays were counted each time a child started a time in care.

Data Source:

PEI Family and Human Services, Child Protection

References:

1. Community Legal Information Association of PEI, Inc. (CLIA). A Guide to Child Protection for Youth - What do I Need to Know? [Internet]. 2011 Nov [cited 2017 Jul 7]. Available from: <http://www.cliapei.ca/sitefiles/File/publications/YOU3.pdf>
2. PEI Child Protection Services, Family and Human Services. Child Protection Services, Child Protection Services Overview, Presentation to Caucus [Internet]. 2016 Mar [cited 2017 Jul 7]. Available from: <https://bradtrivers.com/wp-content/uploads/2016/03/Child-Protection-Services-Presentation-March-2016.pdf>

CHILDHOOD VICTIMIZATION

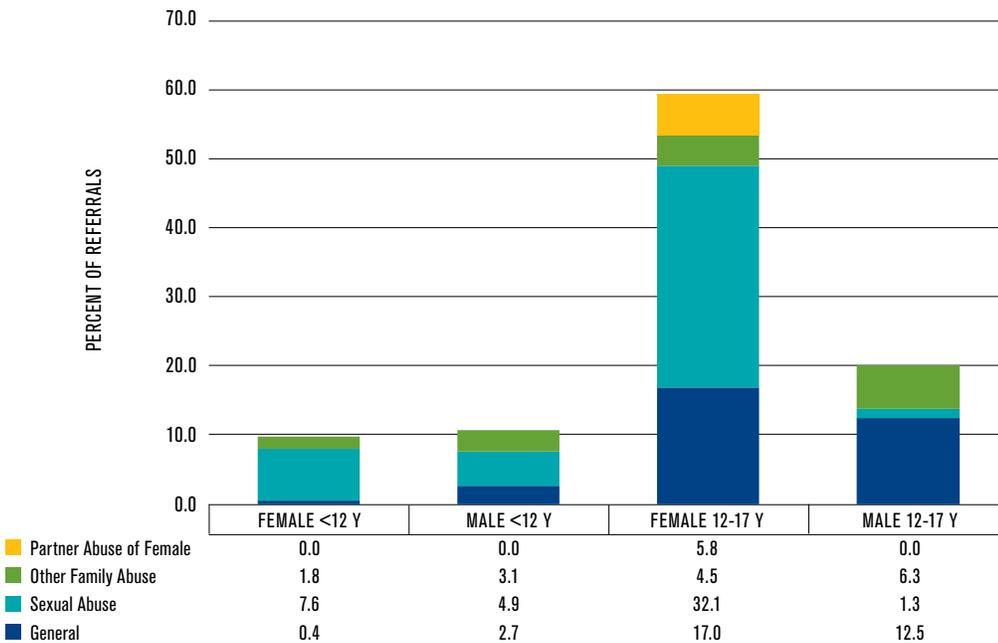
Criminal victimization has serious impacts on the well-being of victims, their families and on society at large.⁽¹⁾ The impacts of childhood victimization may include physical, psychological, emotional, and financial consequences, as well as increased risk of adulthood victimization, and increased likelihood of having contact with police.⁽²⁾

Victim Services assists victims of crime throughout their involvement in the criminal justice system in PEI. Child victims of crime who are referred to and/or access Victim Services may need one or more services; for example, counseling and emotional support, court preparation, and coordination of services.⁽³⁾

In PEI from 2014-2016, about 3 in every 5 new childhood victimization referrals to Victim Services were females between the ages of 12 and 17. Sexual abuse was the most common type of offence committed against the referred child victims with the exception of one group; males between 12 and 17 years old were most likely to be victims of a general offence (e.g. theft, driving offences, or assault not involving family members).

In PEI from 2014-2016, about 3 in every 5 new childhood victimization referrals to Victim Services were females between the ages of 12 and 17.

CHILDHOOD VICTIMIZATION REFERRALS TO VICTIM SERVICES, PEI, AGES 0 TO 17, 2014 - 2016



**Methodology:**

Data from 2014 to 2016 were combined to minimize any risk of identifiability and residual disclosure of information about individuals.

Definition:

Partner abuse of female is considered to be the abuse of a female by their partner. If a male is abused by their partner, it is considered to be other family abuse.

Data Source:

PEI Department of Justice and Public Safety, Victim Services

References:

1. Government of Canada, D. of J. Victims Rights: Enhancing Criminal Law Responses to Better Meet the Needs of Victims of Crime in Canada <http://www.justice.gc.ca/eng/cj-jp/victims-victimes/vrights-droitsv/> (accessed Jun 26, 2017).
2. Government of Canada, S. C. and Perrault, S. *Criminal victimization in Canada, 2014*; Statistics Canada, 2015.
3. PEI Department of Justice and Public Safety Victim Services <https://www.princeedwardisland.ca/en/information/justice-and-public-safety/victim-services> (accessed Jun 26, 2017).

INCIDENTS OF CRIME BY YOUNG PEOPLE

The youth offenders of today were often the vulnerable children of yesterday. Disadvantages and negative influences within children's social, economic, educational and environmental domains are frequently faced by young people who become involved in the youth criminal justice system.⁽¹⁾ The *Youth Criminal Justice Act* (Canada), which came into force in 2003, introduced significant reforms from the *Young Offenders Act* (Canada) to address concerns about the evolution of the youth criminal justice system, such "as overuse of the courts and incarceration in less serious cases, disparity and unfairness in sentencing, a lack of effective reintegration of young people released from custody, and the need to better take into account the interests of victims".⁽²⁾

As an indication that the principles of the *Youth Criminal Justice Act* are being followed, in Canada, the rate of youth in conflict with the law has been on the decline. The same trend has been observed in PEI. In particular, the PEI daily rate of youth under youth justice supervision (community or custody) showed the largest one year decline of all the provinces and territories between 2014/15 and 2015/16.⁽³⁾

During the three years from 2014 to 2016, the total incidents of crime by young people in PEI decreased substantially. The youth commonly involved were older teenage males and the most common outcome was community based supervision (e.g., probation).

INCIDENTS OF CRIME BY YOUNG PEOPLE, PEI, AGES 13 TO 17, 2014 - 2016

		TOTAL INCIDENTS	
		Number	Percent ^a
Year	2014	267	39.7
	2015	222	33.0
	2016	184	27.3
Sex	Female	150	22.3
	Male	523	77.7
Age	13	7	1.0
	14	79	11.7
	15	165	24.5
	16	203	30.2
	17	219	32.5
Outcome	Alternative Measures	87	12.9
	Community Based Sentences	419	62.3
	Custody Sentences	167	24.8
Total^b		673	100.0

^a Percentages exclude unknowns

^b Total includes unknowns

During the three years from 2014 to 2016, the total incidents of crime by young people in PEI decreased substantially and the most common outcome was community based supervision (e.g. probation).

**Data Source:**

PEI Department of Justice and Public Safety, Community and Correctional Services

Methodology:

Data from 2014 to 2016 were combined to minimize any risk of identifiability and residual disclosure of information about individuals.

References:

1. McMurtry R, Curling A. Review of the roots of youth violence: literature review. Vol. 5. [Internet]. Toronto, ON: Ontario Ministry of Children and Youth Services; 2008 [cited 2017 Jun 22]. Available from: <http://www.children.gov.on.ca/htdocs/english/documents/youthandthelaw/rootsyouthviolence-vol5.pdf>
2. Canada, Department of Justice. The Youth Criminal Justice Act: summary and background. Ottawa: Dept. of Justice; 2013.
3. Malakieh J. Youth correctional statistics in Canada, 2015/2016 [Internet]. Canadian Center for Justice Statistics; 2017 Mar [cited 2017 Jun 22]. Available from: <http://www.statcan.gc.ca/pub/85-002-x/2017001/article/14702-eng.pdf>

CONCLUSION

3



CONCLUSION

The importance of the social environment to young people's health, well-being and development is clear. There is a world of great opportunity in relation to health, education, occupation, social engagement, discovery and fulfillment. But it is also a world laden with risks that can affect their ability to achieve full health and well-being both now and in the future, reduce their opportunities for education and occupation, and lead to isolation, frustrated ambition and disappointment.⁽¹⁾

A poor social environment can contribute to negative risk factors and outcomes for children. Evidence suggests that protective factors – those that mediate or moderate the effect of exposure to risk factors – can offset the effect of some structural determinants of health and well-being inequalities, including poverty and deprivation.⁽¹⁾

⁽²⁾ Young people can accumulate protective factors, increasing the likelihood of coping with adverse situations even with poorer life circumstances.⁽¹⁾

The 2017 Prince Edward Island Children's Report has explored the relationship between the Social Determinants of Health, health equity, health behaviors and health outcomes for Island children.

In terms of health outcomes, previous Chief Public Health Officer (CPHO) reports have shown that the majority of PEI's disease burden in adults is caused by four chronic diseases: cancer, cardiovascular disease, chronic pulmonary disease and diabetes. Health inequity exerts a powerful influence on the four behavioral risk factors which are closely linked to these chronic conditions: poor diet, lack of physical activity, tobacco use and excessive alcohol consumption.

The 2017 Prince Edward Island Children's Report has explored the relationship between the Social Determinants of Health (SDH), health equity, health behaviors and health outcomes for Island children. In addition, risk factors in healthy child development, cognitive development and the social environment were considered. Where possible, the Material and Social Deprivation Index⁽³⁾ and Family Affluence Scale III⁽⁴⁾ were used to incorporate socioeconomic factors into the analysis of health and well-being trends. Unfortunately, the data limitations noted on page 6 precluded linking datasets and assessing the effect of socioeconomic factors on many of the indicators.

KEY FINDINGS

Deprivation can be defined as a "state of observable and demonstrable disadvantage relative to the local community or the wider society or nation to which the individual, family or group belongs".⁽⁶⁾ Almost half of Island children are living in areas of the province that fall within two of the highest material and social deprivation quintiles and almost 1 in 4 Islanders living with low income are under the age of 18.

The report's findings indicate that certain risk factors and health outcomes for Island children follow the same pattern as the general population, as reported in the 2016 Chief Public Health Officer's report *Health for All Islanders*. An unequal distribution of the SDH among population groups, in children as well as adults, is leading to differences in health outcomes. In addition, risk factors are present in other well-being domains. While these risk factors may have minimal effects on their own, when combined they can have a strong interactive effect, and exposure to multiple risk factors over time can have a cumulative effect, resulting in additional risks to well-being.⁽⁵⁾



The following key findings are highlighted:

Health inequity exists within our Island

children's population: Island children with the highest material and social deprivation have higher than PEI average rates of nutrition risk and food insecurity, obesity, asthma, mental illness and acute inpatient hospitalization. Island children with low material and social deprivation show the opposite trend.

Island children with the highest material and social deprivation and lowest family affluence have greater health risk factors: Island children with the highest deprivation and lowest family affluence receive breast milk for a shorter duration than the PEI average and have lower rates of fruit and vegetable intake. Island children with the highest privilege and family affluence show the opposite trend.

Gender is associated with differences in health risk factors and health outcomes: Island male children have higher nutrition risk, lower rates of fruit and vegetable consumption, and higher rates of tobacco smoking, heavy drinking and cannabis use. Island male children also have higher than PEI average rates of asthma, mental illness and injury-related hospitalizations. Island female children have lower rates of daily physical activity.

Age is associated with differences in health risk factors and health outcomes: Rates of self-reported physical activity and fruit and vegetable consumption among Island children decreased as grade level increased. Tobacco smoking, heavy drinking and cannabis use most commonly start in the early teen years. Asthma, mental illness and injury-related hospitalizations were more common in children from 12 to 18 years of age whereas acute inpatient hospitalization was more common for children under the age of 6.

Healthy Childhood Development and Cognitive

Development: Approximately 1 in 4 children at 18 months did not meet the Ages and Stages Questionnaire® expectations or were in the monitoring zone in at least one domain. Of the kindergarten-aged children who completed the Early Years Evaluation, 2 out of 5 did not meet the developmental milestones in at least one of the five skill areas. Difficulties in math, reading comprehension and writing were also noted in provincial education assessments.

Social Environment: Of the parents with child protection reports, those with four or more children had a higher rate of recidivism (more than one report in the three year time span) than the PEI average rate. Recidivism was higher for parents with the highest material and social deprivation compared to parents with the lowest material and social deprivation. Of new childhood victimization referrals, approximately 3 of 5 were female children aged 12 to 17.



CALL TO ACTION

This report provides an opportunity for action. Early identification of the indicators enables government, agencies, schools, communities and families to work together to support optimal child health and well-being in PEI. Research shows that interventions targeting the early years are highly cost-effective over a lifetime, leading to reduced social, judicial and health care costs. With this in mind, the following recommendations are made:

Addressing health inequity. Health inequity can be addressed through the redistribution of societal resources to improve the SDH, particularly for disadvantaged groups in PEI. Such actions enable individuals to increase control over, and to improve, their health. Since many of the SDH lie outside the health sector, action on the SDH will require broad collaboration among individuals, communities, partner organizations and all levels of government. Many initiatives that address the SDH are already taking place across Prince Edward Island, yet more work is needed. A strategic approach to addressing the SDH should include:

Sustainable, root-cause, population-level interventions. Evidence-based childhood programs and support should remain an important priority for Prince Edward Island. Long-term focus is needed on high-impact, upstream interventions.

Upstream investment. Financial and non-financial resources need to be allocated toward these population-level interventions. Such an allocation of resources is an investment in the future of Island children.

Intersectoral engagement and governance. A robust, intersectoral governance structure is required to address the risk factors for chronic disease as well as the underlying SDH.

Health in all policies. Health equity should be integrated into public policy-making at all levels of government by systematically taking into account the health implications of decisions, seeking synergies, and avoiding harmful health impacts.

Surveillance and Responsive Environments. The health, social services, education and justice systems that serve Island children and their families and communities provide many opportunities to ensure a responsive environment and optimal child health and well-being. However, from a population monitoring perspective, these systems are fragmented due to a lack of integration and ability to share information across sectors.

Monitoring progress. Ongoing, systematic population assessment and surveillance of the health and well-being of Island children is



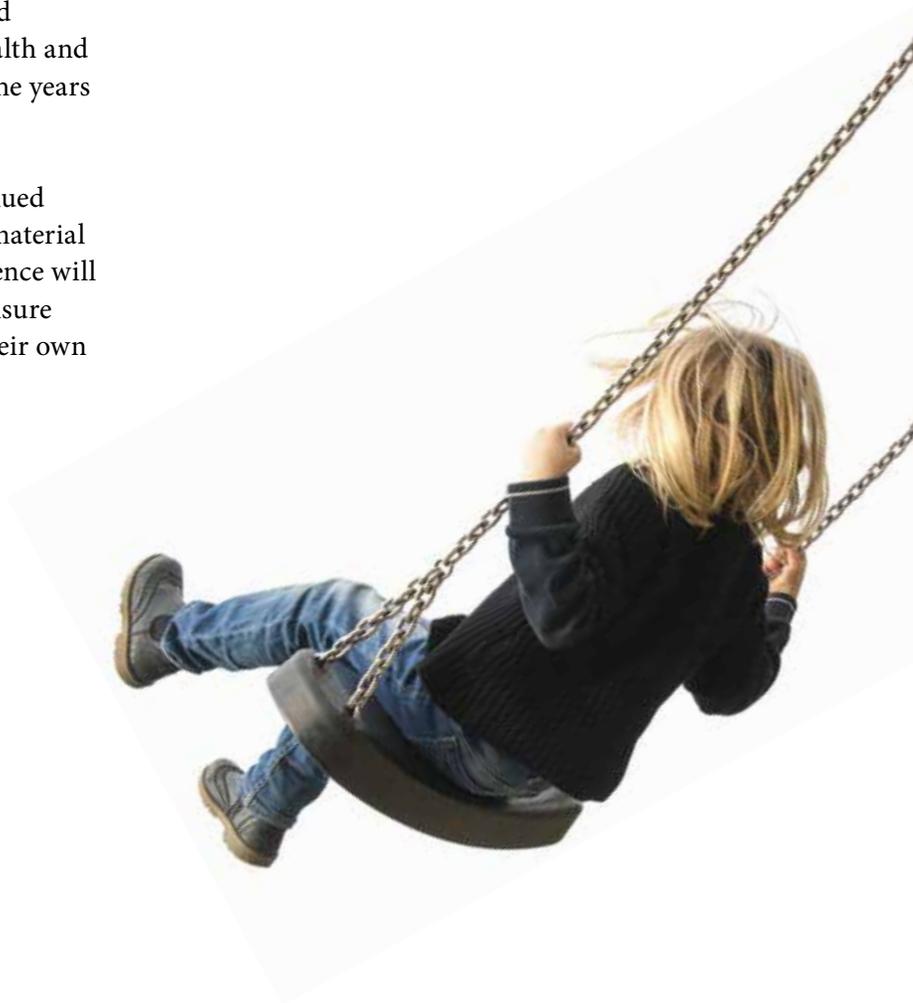
necessary to inform public policy. Government departments and agencies should work together to address legislative and information systems barriers to the collection and sharing of meaningful data required to inform funding, policy, and integrated service delivery decisions.

Responsive Environments. Government departments and agencies should use data-informed approaches to prevent health and well-being disparities by facilitating service linkages across health, social services, education and justice systems.

This report provides a baseline for key indicators of child health and well-being in PEI. Addressing the issues around the collection of meaningful data in robust electronic systems and subsequent data sharing are essential to enable informed decisions that will continue to foster the health and well-being of children in PEI today and in the years to come.

Health equity is a value we all share. Continued efforts to close the gap for those with high material and social deprivation and low family affluence will have a lasting and significant impact and ensure that all Island children are able to realize their own unique and full potential.

This report provides a baseline for key indicators of child health and well-being in PEI. Addressing the issues around the collection of meaningful data in robust electronic systems and subsequent data sharing are essential to enable informed decisions that will continue to foster the health and well-being of children in PEI today and in the years to come.



**References:**

1. Currie C, Molcho M, Boyce W, Holstein B, Torsheim T, Richter M. Researching health inequalities in adolescents: the development of the Health Behaviour in School-Aged Children (HBSC) family affluence scale. *Soc Sci Med* 1982. 2008 Mar;66(6):1429–36.
2. Shader M. Risk Factors for the Perpetration of Youth Violence [Internet]. *Youth Violence: Risk and Protective Factors*. 2017 [cited 2017 Nov 6]. Available from: <https://www.cdc.gov/violenceprevention/youthviolence/riskprotectivefactors.html>
3. Pampalon R, Hamel D, Gamache P, Philibert M, Raymond G, Simpson A. An Area-based Material and Social Deprivation Index for Public Health in Quebec and Canada. *Can J Public Health*. 2012 Oct;103(Suppl. 2):S17–22.
4. Currie CE, Elton RA, Todd J, Platt S. Indicators of socioeconomic status for adolescents: the WHO Health Behaviour in School-aged Children Survey. *Health Educ Res*. 1997 Sep;12(3):385–97.
5. Zubrick SR, Shepherd CCJ, Dudgeon P, Gee G, Paradies Y, Scrine C, et al. Working Together: Aboriginal and Torres Strait Islander Mental Health and Wellbeing Principles and Practice. In: *Social Determinants of Social and Emotional Wellbeing* [Internet]. 2nd ed. Canberra, The University of Western Australia: Dudgeon P, Milroy H, Walker R, editors; 2014 [cited 2017 Nov 6]. p. 93–112. Available from: [http://research-repository.uwa.edu.au/en/publications/social-determinants-of-social-and-emotional-wellbeing\(e23cb102-0d7b-4b98-88f4-228fb5a43a7d\)/export.html](http://research-repository.uwa.edu.au/en/publications/social-determinants-of-social-and-emotional-wellbeing(e23cb102-0d7b-4b98-88f4-228fb5a43a7d)/export.html)
6. Townsend P. Deprivation. *J Soc Policy* [Internet]. 1987 Apr;16(2):125–46. Available from: <https://www.cambridge.org/core/journals/journal-of-social-policy/article/deprivation/071B5D2C0917B508551AC72D941D6054>