Child and Youth Health and Well-Being Indicators Project: Appendix K—Indicator Technical and Methodology Documentation

British Columbia | Office of the Provincial Health Officer

Canadian Institute for Health Information
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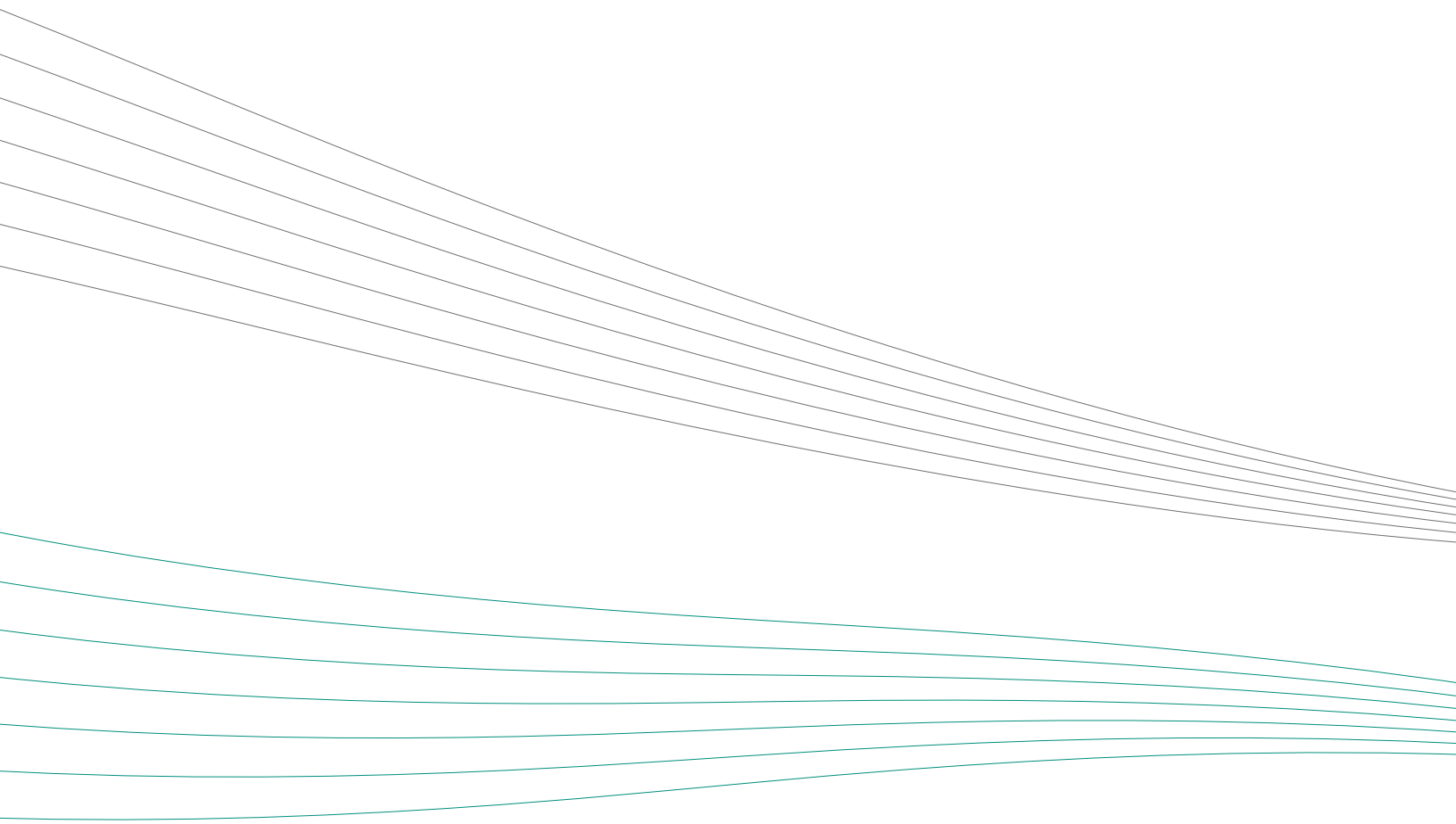

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Appendix K—Indicator Technical and Methodology Documentation

The purpose of this appendix is to provide detailed, technical documentation for each indicator that is proposed to be included in the PHO report on the health and well-being of children and youth in BC. The documentation is as complete as possible given documentation from available data sources, and is intended to give as much information as possible about each indicator to support calculations for ongoing measurement and reporting. The information was accurate at the time of writing but as surveys and data collection methods can change over time it is important to check source information for the latest iterations. Information provided includes the following categories:

- Definition—A description of the indicator, indicating the component parts of the indicator and the population attributes being measured.
- Data Source—A summary of the data source, whether a survey or an administrative database.
- Coding—A summary of the survey questions or administrative data elements used to create the indicator.
- Method of Calculation—A summary of the interaction between the numerator and denominator for the indicator.
- Sample Size—The number of children/youth involved in data collection (only for survey based indicators).
- Reference Population—This refers to the cohort of children/youth covered by the indicator (e.g., 5–9 year-olds).
- Data Availability—The years for which data are available (i.e., years survey conducted, or administrative data are available).
- Comprehensiveness—An indication of the proportion of children/youth represented by the indicator, out of the total cohort.
- Treatment of Missing Values—A summary of how missing values are accounted for in estimates related to the indicator (survey data only).
- Risk Adjustment—This summarizes any adjustments made to sample data, such as age/sex standardization.
- Rationale for Inclusion—A brief statement highlighting the reason(s) for including this indicator in the PHO report (e.g., comments from the evidence review).
- Standards/Benchmarks—As recent as possible reportable numbers for the indicator (if available).
- Limitations—A brief summary of any limitations of the indicator (e.g., population coverage limitations from most surveys).
- Comments—Optional space to provide additional information that is relevant to the indicator (e.g., methodology notes, pending changes).

1. Low Birth Weight

Definition	The proportion of singleton term births with low birth weight (< 2,500 grams).
Data source	BC Perinatal Database
Coding	0 to 9999 grams
Method of calculation	(Number of live singleton births with birth weight below 2,500 grams／number of all live singleton births) * 100
Sample Size	These data come from an administrative data source; therefore, no sampling is conducted.
Reference Population	All live singleton births in BC.
Data Availability	Annually
Comprehensiveness	Covers 99% of all live births in BC.
Treatment of Missing Values	Non-reported births are excluded from the database.
Risk Adjustment	No adjustments are made as the coverage is the vast majority of all births.
Rationale for Inclusion	The evidence review sites a large body of evidence that indicates a number of adverse health effects associated with low birth weight.
Standards/Benchmarks	In 2009, 6.8% of all births were low-weight term births.
Limitations	If the non-reported births represent a significant proportion of low-birth weight newborns, then this indicator will under-report low birth weight.
Comments	This indicator follows the BC Perinatal Health Program standard for low birth weight for gestational age.

2. Smoking During Pregnancy

Definition	The percentage of women who smoked during pregnancy
Data source	Canadian Community Health Survey MXS_Q20 During your last pregnancy, did you smoke daily, occasionally or not at all?
Coding	1. Daily 2. Occasionally
Method of calculation	(Total number of reported Daily or Occasionally for MXS_Q20／ Total number of responses for MXS_Q20 * 100
Sample Size	The overall 2009–2010 CCHS sample is 131 486. That figure includes two years of surveys—approximately 65000 surveys are completed annually. Statistics Canada requires a minimum of 500 responses per health region, except where 500 responses would constitute more than 1/20 of the population in that area. For complete sample allocation information and methodological documentation, please see the CCHS User Guide: 2010 and 2009–2010 Microdata Files.
Reference Population	The CCHS sample is drawn from the Canadian population aged 12 and over.
Data Availability	CCHS surveys are available from 2001, 2003, 2005, 2007, 2008, 2009, and 2010. Surveys were conducted bi-annually until 2007, when Statistics Canada began to collect information annually.
Comprehensiveness	
Treatment of Missing Values	The combined (individual and household response rate for the 2009–2010 CCHS Survey was 72.3%. For question MXS_Q20 specifically, “Don’t know” and “Refused” are acceptable responses, but those responses are excluded from the denominator in Statistics Canada’s calculation of the estimate.
Risk Adjustment	CCHS data are age and sex adjusted, in order for survey estimates to be representative of the reference population. Statistics Canada’s weighting methodology is available in the CCHS User guide: 2010 and 2009–2010 Microdata Files
Rationale for Inclusion	A child born to a woman who smokes during pregnancy is at increased risk for difficulties during pregnancy and early development
Standards/Benchmarks	
Limitations	
Comments	The CCHS data allow for further analysis of alcohol use during pregnancy as MXA_Q31 looks at the issue of frequency of drinking.

3. Alcohol Use During Pregnancy

Definition	The percentage of women who drank alcohol during pregnancy
Data source	Canadian Community Health Survey MXA_Q30 Did you drink any alcohol during your last pregnancy?
Coding	1. Yes
Method of calculation	(Total number of reported Yes for CCHS MXA_Q30／Total number of responses for MXA_Q30 * 100
Sample Size	The overall 2009–2010 CCHS sample is 131 486. That figure includes two years of surveys—approximately 65000 surveys are completed annually. Statistics Canada requires a minimum of 500 responses per health region, except where 500 responses would constitute more than 1/20 of the population in that area. For complete sample allocation information and methodological documentation, please see the CCHS User Guide: 2010 and 2009–2010 Microdata Files.
Reference Population	The CCHS sample is drawn from the Canadian population aged 12 and over.
Data Availability	CCHS surveys are available from 2001, 2003, 2005, 2007, 2008, 2009, and 2010. Surveys were conducted bi-annually until 2007, when Statistics Canada began to collect information annually.
Comprehensiveness	
Treatment of Missing Values	The combined (individual and household response rate for the 2009–2010 CCHS Survey was 72.3%. For question MXA_Q30 specifically, “Don’t know” and “Refused” are acceptable responses, but those responses are excluded from the denominator in Statistics Canada’s calculation of the estimate.
Risk Adjustment	CCHS data are age and sex adjusted, in order for survey estimates to be representative of the reference population. Statistics Canada’s weighting methodology is available in the CCHS User guide: 2010 and 2009–2010 Microdata Files
Rationale for Inclusion	Alcohol use during pregnancy was identified as an important indicator of healthy pregnancy by the Project Advisory Committee
Standards/Benchmarks	
Limitations	
Comments	The CCHS data allow for further analysis of alcohol use during pregnancy as MXA_Q31 looks at the issue of frequency of drinking.

4. Breastfeeding

Definition	Percentage of infants who were breast-fed for at least six months.
Data source	Canadian Community Health Survey MEX_Q06 How long did you breast feed?
Coding	9. 6 months 10. 7 to 9 months 11. 10 to 12 months 12. More than 1 year
Method of calculation	(Total number of reported over 6 months for CCHS MEX_Q06／Total number of responses for MEX_Q06) * 100
Sample Size	The overall 2009–2010 CCHS sample is 131 486. That figure includes two years of surveys—approximately 65000 surveys are completed annually. Statistics Canada requires a minimum of 500 responses per health region, except where 500 responses would constitute more than 1/20 of the population in that area. For complete sample allocation information and methodological documentation, please see the CCHS User Guide: 2010 and 2009–2010 Microdata Files.
Reference Population	The CCHS sample is drawn from the Canadian population aged 12 and over.
Data Availability	CCHS surveys are available from 2001, 2003, 2005, 2007, 2008, 2009, and 2010. Surveys were conducted bi-annually until 2007, when Statistics Canada began to collect information annually.
Comprehensiveness	
Treatment of Missing Values	The combined (individual and household response rate for the 2009–2010 CCHS Survey was 72.3%. For question MEX_Q06 specifically, “Don’t know” and “Refused” are acceptable responses, but those responses are excluded from the denominator in Statistics Canada’s calculation of the estimate.
Risk Adjustment	CCHS data are age and sex adjusted, in order for survey estimates to be representative of the reference population. Statistics Canada’s weighting methodology is available in the CCHS User guide: 2010 and 2009–2010 Microdata Files
Rationale for Inclusion	The evidence review identified the importance of proper nutrition on the physical well-being of infants. The provincial nutritionist recommended this indicator as a core indicator of infant nutrition related to health and well-being
Standards/Benchmarks	In the 2009 CCHS data the proportion of mothers who breastfed exclusively for at least six months was above the national average in British Columbia (33.6%)
Limitations	
Comments	

5. Fruit and Vegetable Consumption

Definition	Percent of students in grades 7–12 in British Columbia that report having eaten fruits and vegetables the previous day.
Data source	McCreary Centre Society—BC Adolescent Health Survey (AHS) Q60: "Did you eat or drink the following things yesterday?"
Coding	Fruit: 1. Yes, once 2. Yes twice or more Green salad or vegetables: 1. Yes, once 2. Yes twice or more
Method of calculation	(Total number of reported "Yes once or Yes twice or more responses/ total number of Q60 responses) * 100
Sample Size	The sample size for the AHS was all students enrolled in the 1,760 classrooms there were selected from all participating school districts. A total of 29,315 students completed valid surveys. Please refer to the AHS IV Methodology Fact Sheet for more information on sampling methodology.
Reference Population	The BC AHS covers students in mainstream classes enrolled in public schools in British Columbia from grades 7 through 12. It excludes ESL classes, youth with special health needs, students in French or Chinese immersion programs, students in alternative education programs, homeschooled students, and students in private schools.
Data Availability	AHS Survey VI from 2008; Survey III from 2003; Survey II from 1998; Survey I from 1992.
Comprehensiveness	BC AHS data are available only for British Columbia, and only from school districts that participate in the survey (50 of 59 BC school districts participated in the 2008 AHS IV, representing 92% of enrolled students in grades 7–12 in BC).
Treatment of Missing Values	Non-response data are not included in the estimates for each question unless they are relevant categories in the question (e.g., for "knowledge questions, for which "don't know" would be considered a valid response). Missing values are generally less than 3% of respondents on questions throughout the surveys.
Risk Adjustment	Classrooms are sampled to have adequate sample size within grade at the HSDA level, with oversample for school districts that chose signed parental consent, which means in smaller school districts, up to one in three students may be sampled, while in large urban areas, it may be one in fifteen or lower. Data are weighted to account for this differential probability of selection, and adjusted to enrolment across the province.
Rationale for Inclusion	Fruit and vegetable consumption is a nutritional public health priority in British Columbia and represents a positive nutritional measure for the targeted age cohort.
Standards/Benchmarks	The 2008 AHS Survey IV found that 82% of BC youth in grades 7–12 reported eating fruit once or more the previous day and 78% reported eating green salad or vegetables.
Limitations	The three school districts in the Northeast Health Service Delivery Area did not participate in the survey in 2008. Other non-participating school districts included Abbottsford and Chilliwack in the Fraser Valley; Quesnel in Northern Interior; Haida Gwaii and Stikine in Northwest HSDA; and, Central Coast in the North Shore and Coast Garibaldi HSDA.
Comments	

6. Vision Screening Rate

Definition	Percent of BC kindergarten students who have been: • Screened for vision problems • Referred for further diagnostic testing
Data source	PARIS (Vancouver Coast Health); iPHIS (Data source will be Panorama in the future)
Coding	Information available from *The Early Childhood Vision Screening Program* includes the following variables: total enrolled; total screened; % screened; total referred; % referred.
Method of calculation	• (Number of kindergarten students screened ⁄ total number of kindergarten students) * 100 • (Number of kindergarten students referred for further diagnostic testing ⁄ total number of kindergarten students) * 100
Sample Size	This is a population-based data source. In 2010–2011, there were 41,929 kindergarten students enrolled.
Reference Population	BC kindergarten students.
Data Availability	Data are available from 2007 and annually.
Comprehensiveness	Kindergarten students across the province, inclusive of public, private and First Nations schools.
Treatment of Missing Values	Missing data are excluded from calculations.
Risk Adjustment	Data are not risk adjusted as they are based on total population.
Rationale for Inclusion	Evidence illustrates that there are significant benefits associated with screening for sensory impairments as early as possible. The effectiveness and cost-effectiveness of screening programs have been reviewed by a number of studies. A common conclusion from these studies is the suggestion of the importance of further study. In the meantime, tracking the prevalence of sensory impairment provides important information on potential future health and child development challenges.
Standards/Benchmarks	In 2010–2011, 92% (38,720 out of 41,989) kindergarten students were screened, and 22% of those were referred for further diagnostic testing.
Limitations	Excludes students at the relevant age who are not enrolled in kindergarten.
Comments	Vision screening is administered by public health staff that performed screening tests of each child to identify possible vision concerns. Vision screeners received training, including a training manual, to ensure consistent technique. Vision screening is not a diagnostic exam by an ophthalmologist or optometrist; rather, vision screening identifies those individuals who may have a vision condition and refers them for further diagnostic testing.

7. Hearing Screening Rate

Definition	Percent of BC newborns who have been: • Screened for hearing problems • Referred for further diagnostic testing
Data source	British Columbia Early Hearing Surveillance Tool (BEST)
Coding	The BEST screening program captures the following variables: % of birth cohort screened; % pass results of total screened; % fail results of total screened; diagnostic assessments completed; % of all assessments with hearing loss (HL) found.
Method of calculation	• (Number of newborns screened／total number of newborns) * 100 • (Number of newborns referred for further diagnostic testing／total number of newborns) * 100
Sample Size	This is a population-based data source.
Reference Population	Newborns screened in hospitals, public health units, or by public health home visit.
Data Availability	Annual
Comprehensiveness	All BC newborns.
Treatment of Missing Values	Missing data are excluded from calculations.
Risk Adjustment	Data are not risk adjusted as they are based on total population.
Rationale for Inclusion	Evidence illustrates that there are significant benefits associated with screening for sensory impairments as early as possible. The effectiveness and cost-effectiveness of screening programs have been reviewed by a number of studies. A common conclusion from these studies is the suggestion of the importance of further study. In the meantime, tracking the prevalence of sensory impairment provides important information on potential future health and child development challenges.
Standards/Benchmarks	Based on the estimated prevalence, it is expected that between 80 and 125 infants in BC will be born each year with some degree of hearing loss.
Limitations	
Comments	Approximately 42,000 infants are born in BC each year. Congenital hearing loss is reported to occur in between one and three of every 1,000 births.

8. Dental Caries Prevalence

Definition	Prevalence of dental caries among BC Kindergarten students
Data source	British Columbia Dental Survey of Kindergarten-Aged Children
Coding	• Carries Immune: No evidence of visible decay and no existing restorations • No Visible Decay: No evidence of visible decay but evidence of existing restorations • Visible Decay: Evidence of obvious decay in one or more teeth • Decay in Quadrants: Evidence of decay in one or more teeth in 1, 2, 3 or 4 quadrants • Urgent Referrals: Children who were referred for further treatment due to the urgency of their conditions • Non-urgent Referrals: Children who did not have urgent conditions but were referred for further treatment
Method of calculation	Number of kindergarten students screened/total number of kindergarten students) by oral health statistics in coding section above * 100
Sample Size	In the 2009–2010 school year, 35,420 children participated in the provincial dental survey (91.1% of all those enrolled).
Reference Population	BC children, between the ages of four and six, enrolled in kindergarten inclusive of public, private and First Nations schools.
Data Availability	Every three years (2006–2007/2009–2010/2012–2013)
Comprehensiveness	Covers over 90% of all enrolled kindergarten students.
Treatment of Missing Values	Missing data are excluded from reported numbers.
Risk Adjustment	
Rationale for Inclusion	Oral health has been shown to be related to overall health and well-being. Children at risk of dental caries tend to be in lower income families or communities, low maternal education and aboriginal families.
Standards/Benchmarks	In 2009–2010, 63.3% of children were carries immune, 19.7% had no visible decay but restorations present, 17.0% had visible decay, and 83% had no evidence of decay at the time of the survey.
Limitations	
Comments	

9. Percentage of Children with Healthy Weight

Definition	Percent of 18 month old children, and percent of students in grades 7–12 with healthy weights (between the 3rd and 97th percentile) as determined by World Health Organization age/gender specific growth charts (height and weight).
Data source	iPHIS; Panorama, PARIS for 18 month old children. For students in grades 7 to 12 Adolescent Health Survey Qs Q3. How tall are you? Q4 How much do you weigh?
Coding	Weight measured in kilograms. Height measured in centimeters.
Method of calculation	(Total number of children or youth whose weight is within the "healthy range" as determined by WHO standards/total number of children or youth in the given age range) * 100
Sample Size	The data source for this is administrative data, therefore no sampling is conducted, rather it is based on all reported height and weight measurements.
Reference Population	All 18 month old children captured in the iPHIS, Panorama or PARIS The BC AHS covers students in mainstream classes enrolled in public schools in British Columbia from grades 7 through 12. It excludes ESL classes, youth with special health needs, students in French or Chinese immersion programs, students in alternative education programs, homeschooled students, and students in private schools.
Data Availability	Panorama availability is unknown AHS Survey VI from 2008; Survey III from 2003; Survey II from 1998; Survey I from 1992.
Comprehensiveness	BC AHS data are available only for British Columbia, and only from school districts that participate in the survey (50 of 59 BC school districts participated in the 2008 AHS IV, representing 92% of enrolled students in grades 7–12 in BC).
Treatment of Missing Values	For 18 month old children there are no missing values per se, as only reported measures are used For students grades 7 to 12 non-response data are not included in the estimates for each question unless they are relevant categories in the question (e.g., for "knowledge questions, for which "don't know" would be considered a valid response). Missing values are generally less than 3% of respondents on questions throughout the surveys.
Risk Adjustment	18 month old child data are not risk adjusted as they are based on the total population Classrooms are sampled to have adequate sample size within grade at the HSDA level, with oversample for school districts that chose signed parental consent, which means in smaller school districts, up to one in three students may be sampled, while in large urban areas, it may be one in fifteen or lower. Data are weighted to account for this differential probability of selection, and adjusted to enrolment across the province.
Rationale for Inclusion	Healthy weight is seen as a precursor for life-long health issues such as the risk of diabetes from being overweight. There are also associations with underweight as well, particularly with respect to mental health issues stemming from body image among younger women.
Standards/Benchmarks	Based on World Health Organization standards for age and gender.
Limitations	The degree to which data are non-reported will affect the accuracy of population-level representation of healthy weights for the entire pediatric population.
Comments	See the following from the Dieticians of Canada website for standards adapted for Canada.

10. Positive Self-rated Health

Definition	Percentage of students in grades 7–12 in British Columbia that report good or excellent self-rated health.
Data source	McCreary Centre Society—BC Adolescent Health Survey (AHS) Q43: "In general, how would you describe your health?"
Coding	Excellent/Good/Fair/Poor
Method of calculation	(Total number of reported "good" or "excellent" self-rated health responses/ total number of self-rated health responses) * 100
Sample Size	The sample size for the AHS was all students enrolled in the 1,760 classrooms there were selected from all participating school districts. A total of 29,315 students completed valid surveys. Please refer to the AHS IV Methodology Fact Sheet for more information on sampling methodology.
Reference Population	The BC AHS covers students in mainstream classes enrolled in public schools in British Columbia from grades 7 through 12. It excludes ESL classes, youth with special health needs, students in French or Chinese immersion programs, students in alternative education programs, homeschooled students, and students in private schools.
Data Availability	AHS Survey VI from 2008; Survey III from 2003; Survey II from 1998; Survey I from 1992.
Comprehensiveness	BC AHS data are available only for British Columbia, and only from school districts that participate in the survey (50 of 59 BC school districts participated in the 2008 AHS IV, representing 92% of enrolled students in grades 7–12 in BC).
Treatment of Missing Values	Non-response data are not included in the estimates for each question unless they are relevant categories in the question (e.g., for "knowledge questions, for which "don't know" would be considered a valid response). Missing values are generally less than 3% of respondents on questions throughout the surveys.
Risk Adjustment	Classrooms are sampled to have adequate sample size within grade at the HSDA level, with oversample for school districts that chose signed parental consent, which means in smaller school districts, up to one in three students may be sampled, while in large urban areas, it may be one in fifteen or lower. Data are weighted to account for this differential probability of selection, and adjusted to enrolment across the province.
Rationale for Inclusion	Self-rated health is considered a good proxy for overall health. There is evidence to suggest that youth with higher self-reported health also typically report higher health status, as measured by a range of issues including cardiovascular health.
Standards/Benchmarks	The 2008 AHS Survey IV found that 84% of BC youth in grades 7–12 reported "good" or "excellent" health. (Males: 39% "excellent", 49% "good"; Females: 23% "excellent", 58% "good")
Limitations	The three school districts in the Northeast Health Service Delivery Area did not participate in the survey in 2008. Other non-participating school districts included Abbottsford and Chilliwack in the Fraser Valley; Quesnel in Northern Interior; Haida Gwaii and Stikine in Northwest HSDA; and, Central Coast in the North Shore and Coast Garibaldi HSDA.
Comments	Evidence suggests that adolescent perceptions of health are framed by their physical health status as well as their personal, behavioural, and social health factors.

11. Youth Physical Activity Levels

Definition	Percentage of British Columbia students in grades 7 to 12 who participate in physical activities for at least sixty minutes, seven days per week.
Data source	McCreary Centre Society—Adolescent Health Survey (AHS) Q144: "On how many of the last 7 days did you exercise or participate in physical activities for at least 20 minutes **that made you sweat and breathe hard**, such as soccer, jogging, dancing, swimming, tennis, bicycling or similar aerobic activities?"
Coding	0 days, 1 day, 2 days, 3 days, 4 days, 5 days, 6 days, 7 days
Method of calculation	(Number of respondents who answered "7 days" for Q144/Total number of responses for Q 144) * 100
Sample Size	The target sample for the BC AHS was all students enrolled in the 1,760 classrooms, stratified by grade and Health Service Delivery Area that were selected from participating school districts. A total of 29,315 students completed valid surveys. Please refer to the AHS IV Methodology Fact Sheet for more information on sampling methodology.
Reference Population	The BC AHS covers students in mainstream classes enrolled in public schools in British Columbia from grades 7 through 12. It excludes ESL classes, youth with special health needs, students in French or Chinese immersion programs, students in alternative education programs, homeschooled students, and students in private schools.
Data Availability	AHS Survey VI from 2008; Survey III from 2003; Survey II from 1998; Survey I from 1992.
Comprehensiveness	BC AHS data are available only for British Columbia, and only from school districts that participate in the survey (50 of 59 BC school districts participated in the 2008 AHS IV, representing 92% of enrolled students in grades 7–12 in BC.
Treatment of Missing Values	Non-response data are not included in the estimates for each question unless they are relevant categories in the question (e.g., for "knowledge questions, for which "don't know" would be considered a valid response). Missing values are generally less than 3% of respondents on questions throughout the surveys.
Risk Adjustment	Classrooms are sampled to have adequate sample size within grade at the HSDA level, with oversample for school districts that chose signed parental consent, which means in smaller school districts, up to one in three students may be sampled, while in large urban areas, it may be one in fifteen or lower. Data are weighted to account for this differential probability of selection, and adjusted to enrolment across the province.
Rationale for Inclusion	The evidence review recommended the inclusion of this indicator, given the high impact that physical activity has on the lives of children and youth in the province, and the significant opportunity for modifiability and improvement through intervention.
Standards/Benchmarks	The 2008 AHS IV found that 25% of males and 11% of females exercised seven days per week. 7% of males and 10% of females did not exercise at all.
Limitations	The three school districts in the Northeast Health Service Delivery Area did not participate in the survey in 2008. Other non-participating school districts included Abbottsford and Chilliwack in the Fraser Valley; Quesnel in Northern Interior; Haida Gwaii and Stikine in Northwest HSDA; and, Central Coast in the North Shore and Coast Garibaldi HSDA.
Comments	The minimum standard for activity has changed from 20 minutes to 60 minutes per day. However, as this change is recent, until data are available on the 60-minute standard, information can only be reported out on 20 minutes. This issue was discussed with the McCreary Institute prior to the 2013 survey.

12. Frequency of Tobacco Use

Definition	Percent of youth aged 15–19 who report smoking occasionally or every day.
Data source	Statistics Canada—Canadian Tobacco Use Monitoring Survey (CTUMS)—Smoking Status Section Q SS_Q10: At the present time, do you smoke cigarettes every day, occasionally, or not at all?
Coding	(1) Every day, (2) Occasionally,(3) Not at all, DK—Don't Know, RF—Refused
Method of calculation	(Number of youth aged 15–19 who answered "Every day" and "Occasionally" for question SS_Q10/Number of youth aged 15–19 who responded to question SS_Q10) * 100
Sample Size	The 2010 CTUMS survey collected data from 19 822 respondents between February and December 2010. CTUMS oversamples for the population aged 15–24 in order to obtain more granular information for this at-risk population. Please see the CTUMS web page for a full account of the sampling methodology.
Reference Population	All persons in Canada aged 15 and over, excluding those living in institutions, on reserves, or members of the military.
Data Availability	CTUMS has collected data annually since 1999.
Comprehensiveness	CTUMS collects information from all Canadian provinces and territories, except for the Northwest Territories or Nunavut.
Treatment of Missing Values	The household response rate for the CTUMS, February to December 2010 Annual Summary was 73.8%. The person response rate was 84.2%. "Don't know" and "Refused" are acceptable responses for question SS_Q10 in the context of this survey.
Risk Adjustment	The survey estimates have been weighted to compensate for households without landlines, and to account for the oversampling of the population aged 15–24. Please see the CTUMS web page for a full account of the weighting methodology.
Rationale for Inclusion	As reported in the evidence review, "tobacco smoking has long been associated with adverse health effects; in 1950s the first major evidence of such effects was published, linking the prevalence of lung cancer with smoking rates. Tobacco smoking is now identified as a major cause of a vast number of diseases and other adverse effects, including heart disease, stroke, lung cancer and various other cancers, diabetes, and hypertension. Among current and former smokers in B.C., 85% had begun smoking at 19 years of age or younger."
Standards/Benchmarks	The 2010 CTUMS survey found that 7% of youth reported smoking daily, and consumed an average of 11.6 cigarettes per day, while 5% of youth reported smoking occasionally.
Limitations	CTUMS does not survey full-time residents of institutions. Also, this is a telephone survey, so households without telephones and cell-phone only households are excluded from the sample population.
Comments	

13. Binge Drinking

Definition	Percentage of British Columbia students in grades 7 to 12 who report having engaged in binge drinking in the past 30 days.
Data source	McCreary Centre Society—BC Adolescent Health Survey (AHS) Q70: "During the past 30 days, on how many days did you have 5 or more drinks of alcohol in a row, that is, within a couple of hours?"
Coding	0 days, 1 day, 2 days, 3 to 5 days, 6 to 9 days, 10 to 19 days, 20 or more days
Method of calculation	(Number respondents answering "1 day" or more for Q70/Total number of AHS respondents) * 100
Sample Size	The target sample for the BC AHS was all students enrolled in the 1,760 classrooms, stratified by grade and Health Service Delivery Area that were selected from participating school districts. A total of 29,315 students completed valid surveys. Please refer to the AHS IV Methodology Fact Sheet for more information on sampling methodology.
Reference Population	The BC AHS covers students in mainstream classes enrolled in public schools in British Columbia from grades 7 through 12. It excludes ESL classes, youth with special health needs, students in French or Chinese immersion programs, students in alternative education programs, homeschooled students, and students in private schools.
Data Availability	AHS Survey VI from 2008; Survey III from 2003; Survey II from 1998; Survey I from 1992.
Comprehensiveness	BC AHS data are available only for British Columbia, and only from school districts that participate in the survey (50 of 59 BC school districts participated in the 2008 AHS IV, representing 92% of enrolled students in grades 7–12 in BC).
Treatment of Missing Values	Non-response data are not included in the estimates for each question unless they are relevant categories in the question (e.g., for "knowledge questions, for which "don't know" would be considered a valid response). Missing values are generally less than 3% of respondents on questions throughout the surveys.
Risk Adjustment	Classrooms are sampled to have adequate sample size within grade at the HSDA level, with oversample for school districts that chose signed parental consent, which means in smaller school districts, up to one in three students may be sampled, while in large urban areas, it may be one in fifteen or lower. Data are weighted to account for this differential probability of selection, and adjusted to enrolment across the province.
Rationale for Inclusion	The evidence review found, "binge drinking contributes to a substantial portion of alcohol-related deaths; it has been associated with alcohol poisoning, unintentional injuries (including motor vehicle crashes), suicide, hypertension, sexually transmitted infections, meningitis, alcohol-related disorders and alcohol dependence. Younger age of drinking initiation is highly associated with risk of drinking problems such as alcohol dependence later in life", and recommended this indicator for inclusion.
Standards/Benchmarks	The 2008 AHS IV found that 44% of youth who had tried alcohol had engaged in binge drinking in the past month. Males and females were found to be equally likely to binge drink.
Limitations	This measure does not differentiate between genders in defining binge drinking, where general guidelines suggest defining binge drinking as four drinks for females, five for males. The three school districts in the Northeast Health Service Delivery Area did not participate in the survey in 2008. Other non-participating school districts included Abbottsford and Chilliwack in the Fraser Valley; Quesnel in Northern Interior; Haida Gwaii and Stikine in Northwest HSDA; and, Central Coast in the North Shore and Coast Garibaldi HSDA.
Comments	This indicator does not measure the number of adolescents who have tried alcohol—that broader question would be better answered by AHS Q66—"Have you ever had a drink of alcohol other than a few sips?" This measure specifically measures binge drinking, which the evidence reviews identifies as the most significant area of concern. This question may change for 2013 to reflect gender-specific binge drinking definitions.

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14. Marijuana Use

Definition	Percentage of British Columbia students in grades 7 to 12 who report having used marijuana in the past 30 days.
Data source	McCreary Centre Society—BC Adolescent Health Survey (AHS) Q63: "During the past 30 days, how many days did you use marijuana (pot, weed)?
Coding	0 days, 1 day, 2 days, 3 to 5 days, 6 to 9 days, 10 to 19 days, 20 or more days
Method of calculation	(Number of respondents answering "1 day" or greater for Q63／Total number of AHS respondents) * 100
Sample Size	The target sample for the BC AHS was all students enrolled in the 1,760 classrooms, stratified by grade and Health Service Delivery Area that were selected from participating school districts. A total of 29,315 students completed valid surveys. Please refer to the AHS IV Methodology Fact Sheet for more information on sampling methodology.
Reference Population	The BC AHS covers students in mainstream classes enrolled in public schools in British Columbia from grades 7 through 12. It excludes ESL classes, youth with special health needs, students in French or Chinese immersion programs, students in alternative education programs, homeschooled students, and students in private schools.
Data Availability	AHS Survey VI from 2008; Survey III from 2003; Survey II from 1998; Survey I from 1992.
Comprehensiveness	BC AHS data are available only for British Columbia, and only from school districts that participate in the survey (50 of 59 BC school districts participated in the 2008 AHS IV, representing 92% of enrolled students in grades 7–12 in BC).
Treatment of Missing Values	Non-response data are not included in the estimates for each question unless they are relevant categories in the question (e.g., for "knowledge questions, for which "don't know" would be considered a valid response). Missing values are generally less than 3% of respondents on questions throughout the surveys.
Risk Adjustment	Classrooms are sampled to have adequate sample size within grade at the HSDA level, with oversample for school districts that chose signed parental consent, which means in smaller school districts, up to one in three students may be sampled, while in large urban areas, it may be one in fifteen or lower. Data are weighted to account for this differential probability of selection, and adjusted to enrolment across the province.
Rationale for Inclusion	Youth focus groups rated substance use as a high concern regarding health and well-being. There is some clinical evidence for the adverse health effects of marijuana among youth, though the population-level data derived from epidemiologic studies is modest/inconclusive.
Standards/Benchmarks	The 2009 AHS IV found, among students who had tried marijuana, 58% had used it in the past 30 days (Males: 62%, Females: 53%). Males consumed more marijuana, with 16% using on 20 or more days, compared to 8% of females.
Limitations	The three school districts in the Northeast Health Service Delivery Area did not participate in the survey in 2008. Other non-participating school districts included Abbottsford and Chilliwack in the Fraser Valley; Quesnel in Northern Interior; Haida Gwaii and Stikine in Northwest HSDA; and, Central Coast in the North Shore and Coast Garibaldi HSDA.
Comments	

15. Immunization Rates

Definition	Percent of students: • Kindergarten students (age 4 to 6) with up-to-date immunizations; and, • Grade 9 students with up-to-date immunizations.
Data source	BC Centre for Disease Control—Immunization Surveillance database.
Coding	Up-to-date: Yes or No./Vaccinated: Yes or No
Method of calculation	(Number of Kindergarten students (age 4 to 6) receiving vaccine or booster／number of all Kindergarten students age 4 to 6) * 100 (Number of Grade 9 students receiving vaccine or booster／number of all Grade 9 students) * 100
Sample Size	These data are based on total enrolled student population—no sampling is performed.
Reference Population	Students in BC schools who are enrolled in (a) Kindergarten (ages 4 to 6), or (b) Grade 9.
Data Availability	Annually
Comprehensiveness	Covers all students currently enrolled in Kindergarten and Grade 9 throughout the province.
Treatment of Missing Values	Missing data (e.g., students not in school on the day of immunization) are excluded from reported rates.
Risk Adjustment	Data are not risk adjusted as they are based on total population.
Rationale for Inclusion	The evidence review highlighted the importance of immunization programs as an integral part of overall health monitoring. Even if, as has been suggested, there is high saturation and well-documented effectiveness for vaccinations overall, there remains value in ongoing monitoring of such programs.
Standards/Benchmarks	In 2010, 86.6% of Grade 9 students received a Td vaccination, and 85.3% received an aP booster.
Limitations	Focusing on currently enrolled students may underestimate the proportion that has received a vaccination as it excludes those students not actively enrolled, or who are absent from school on vaccination days.
Comments	

16. Asthma Prevalence

Definition	Asthma prevalence, by age and gender, expressed as a percentage.
Data source	Discharge Abstract Database and Medical Services Plan billing codes.
Coding	A most responsible diagnosis of Asthma: ICD-9/9-CM: 493/ICD-10-CA: J45
Method of calculation	(The number of all pediatric cases of asthma／the number of all children in BC) * 100
Sample Size	The data source for this indicator is an administrative database, therefore there is no sampling.
Reference Population	Applies to all children and youth in BC with health insurance.
Data Availability	Annually
Comprehensiveness	All reported and medically treated cases of asthma
Treatment of Missing Values	Missing data (e.g., missing ICD codes or other data elements necessary for calculations) are excluded from reported rates.
Risk Adjustment	Risk adjustment is not conducted for administrative data.
Rationale for Inclusion	Asthma is the most common chronic disease in children, and therefore, is likely easiest to monitor. Moreover, the evidence review pointed out that asthma is related to a number of other disorders, including eczema and food allergies, and may be an umbrella term for a number of conditions, “each with a different causal pathway and prevention potential”.
Standards/Benchmarks	An estimated 8% of children in Canada have asthma, according to the most recent release from the NLSCY.
Limitations	MSP data includes only those cases diagnosed and/or treated in a general physician’s office or community clinic. Those cases diagnosed and/or treated exclusively in an Emergency Department would be excluded from this indicator, as would those with no health insurance.
Comments	BC has an asthma registry within the Ministry of Health that tracks the prevalence of asthma.

17. Severe Childhood Injury Index

Definition	Incidence of severe injuries among children and youth age 0 to 19
Data source	BC Injury Research and Prevention Unit (BCIRPU)
Coding	
Method of calculation	This is a new injury index. Contact the BCIRPU for current calculation
Sample Size	n/a
Reference Population	All children age 0–19.
Data Availability	Annually
Comprehensiveness	
Treatment of Missing Values	n/a
Risk Adjustment	Rates are age and sex standardized.
Rationale for Inclusion	Severe injuries are preventable and can permanently alter a child's health and well-being.
Standards/Benchmarks	
Limitations	
Comments	This is a new index that tracks life altering and life threatening injuries.

18. Chlamydia Incidence

Definition	Incidence of genital Chlamydia among youth age 15–19 years of age, expressed as a rate per 100,000 population, by gender.
Data source	BC Centre for Disease Control
Coding	Chlamydia Reported: Yes/No
Method of calculation	(Number of new cases of Chlamydia reported annually/total population aged 15–19, by gender) * 100,000
Sample Size	There is no sampling as this is an administrative data source.
Reference Population	Youth aged 15–19 years of age.
Data Availability	Annually
Comprehensiveness	Covers all youth aged 15–19, whether sexually active or not.
Treatment of Missing Values	There are no missing values. All reported cases are included in the database.
Risk Adjustment	No risk adjustment is conducted for administrative data.
Rationale for Inclusion	Chlamydia is one of the most common sexually transmitted infections, and also one of the most preventable through the use of condoms. Rates have been increasing steadily since 1998, and it is important to monitor the incidence to assess the impact of prevention and treatment programs.
Standards/Benchmarks	In 2010, the rate for females was 1,586.2, compared to 1,028.8 in 2001 (peaking at 1652.2 in 2009). Over the same time period, the rate for males increased from 151.4 to 297.0 (but peaked at 317.8 in 2009).
Limitations	Many genital Chlamydia infections are asymptomatic and thus diagnosed infections reflect only a fraction of the total population burden.
Comments	In general, Chlamydia infection rates are highest among females aged 20–24 and 15–19 and among males aged 20–24 and 25–29. The greater number of infections detected in females is, in part, due to greater testing in females as part of routine screening at the time of visits for other reasons (e.g., pap testing or contraception counseling).

19. Teen Birth Rate

Definition	The live birth rate for females age 15–19, expressed as a rate per 1,000 females.
Data source	BC Vital Statistics
Coding	
Method of calculation	(The number of live births for females between the ages of 15–19 / the total number of females age 15–19) * 1,000
Sample Size	n/a
Reference Population	All teenage girls between the ages of 15 and 19 during the reference year.
Data Availability	Annually
Comprehensiveness	Covers all births in the province.
Treatment of Missing Values	There are no missing values as this is an administrative data source.
Risk Adjustment	No risk adjustment is performed on administrative data.
Rationale for Inclusion	A child born to a teenage mother increases risks associated with child birth and early development, as well as socio-economic factors related to lone-parenthood, a likely scenario for a teenage mother. Effectively, as noted in the evidence review, the pediatric health care “burden” is potentially doubled with teenage pregnancies.
Standards/Benchmarks	In 2005, there were 4,120 total live births to teenage females in BC, a rate of 25.3 per 1,000 females.
Limitations	A significant proportion of teenage pregnancies are terminated via abortion, so the successful or live birth outcome will underestimate the total number of teenage pregnancies.
Comments	

20. Infant Mortality

Definition	Number of infant deaths per 1,000 live births in a calendar year, where an infant is defined as being less than 365 days old.
Data source	BC Vital Statistics
Coding	
Method of calculation	The infant mortality rate is the total number of deaths in a given year of children less than one year old, divided by the number of live births in the same year, multiplied by 1,000.
Sample Size	This is administrative data, therefore there is no sampling.
Reference Population	The population of British Columbia.
Data Availability	British Columbia has collected the vital statistics necessary to calculate this indicator since 1921.
Comprehensiveness	All births and deaths in British Columbia are registered with the BC Vital Statistics Agency
Treatment of Missing Values	There are no missing values. All births and deaths are captured in the BC Vital Statistics database.
Risk Adjustment	These data are reported for the province as a whole; therefore, no risk adjustment (e.g., age and sex standardization) is conducted.
Rationale for Inclusion	Infant mortality is an international comparator and used internationally as a measure of the population health of children. The Project Advisory Committee endorsed this indicator as a means of international comparison.
Standards/Benchmarks	The infant mortality rate for British Columbia in 2010 was 3.7 per 1,000 live births
Limitations	
Comments	The aboriginal infant mortality rate is higher than the provincial average.

21. Motor Skills

Definition	Percentage of children identified as "vulnerable" based on the Physical Health and Well-being Domain of the Early Development Instrument (EDI).
Data source	The Physical Health and Well-being Domain of the EDI
Coding	
Method of calculation	EDI results are based on proprietary calculations from the Offord Centre. Aggregate data are available from the Human Early Learning Partnership (HELP) at UBC.
Sample Size	The EDI is a census style data collection tool, therefore there is no sampling conducted.
Reference Population	All BC children enrolled in public school kindergarten during the reference year.
Data Availability	Wave 2 (04/05 to 06/07) n=41,170; Wave 3 (07/08 to 08/09) n=37,398; Wave 4 (09/10 to 10/11) n=46,318
Comprehensiveness	Covers kindergarten students enrolled in public schools at the time of completion, usually at the beginning of the school year.
Treatment of Missing Values	To be included in the calculation, no more than 30% of data can be missing from a single record on the entire set of sub-domain questions.
Risk Adjustment	Data are not adjusted in any way for reporting as the entire population is covered.
Rationale for Inclusion	Motor skills are of fundamental importance for human development. Achievement in early elementary school is comprised of development focused skills, which address a student's readiness to learn. Evidence suggests that identifying factors in this early stage of cognitive development is important to understanding patterns in achievement in later schooling.
Standards/Benchmarks	Wave 2 = 11.8%/Wave 3 = 11.7%/Wave 4 = 13.5%
Limitations	EDI measures exclude students enrolled in private schools. Full coverage for the province is available starting in
Comments	

22. Incidence and Prevalence of the 5 Most Common Mental Health Disorders

Definition	The incidence and prevalence of the most five (5) most common mental health disorders for children younger than 19.
Data source	Medical Services Plan Database (MSP) ; Discharge Abstract Database (DAD)
Coding	ICD-9/ICD-10-CA diagnosis codes, based on the year of information used.
Method of calculation	Rates of diagnosis coding in above mentioned administrative databases
Sample Size	This is administrative data, therefore there is no sampling.
Reference Population	Population age 18 and younger
Data Availability	Annually
Comprehensiveness	All hospitalizations (DAD) identified and all physician visits (MSP)
Treatment of Missing Values	There are no missing values. All suicides are captured in the BC Vital Statistics database.
Risk Adjustment	These data are reported for the province as a whole; therefore, no risk adjustment (e.g., age and sex standardization) is conducted.
Rationale for Inclusion	A number of mental disorders commonly present throughout childhood and adolescence, and exert clear negative influences on cognitive, emotional, and social aspects of development. Left unaddressed, these disorders tend to recur and adversely permeate an individual's life through their compromising influence on the attainment of maturational milestones.
Standards/Benchmarks	2.7% of Canadian youth, aged 12–19, have been diagnosed by a health professional as having a mood disorder (i.e., depression, bipolar disorder, mania).
Limitations	
Comments	It will be necessary to conduct the relevant analyses to determine the most common disorders, and then report based on appropriate age groups.

23. Positive Self Esteem

Definition	The percent of students in grades 7–12 in British Columbia who report positive self-esteem.
Data source	McCreary Centre Society—BC Adolescent Health Survey Q108: "How much do you agree with the following statements? (1) I usually feel good about myself; (2) I am able to do things as well as most other people; (3) On the whole, I'm satisfied with myself; (4) I feel I do not have much to be proud of; (5) Sometimes I think that I am no good; (6) I feel that I can't do anything right; (7) I feel that my life is not very useful"
Coding	Disagree/Mostly disagree/Mostly agree/Agree
Method of calculation	This is a scale, averaged across all items, with at least 6 items required for a score; positive self-esteem is a score higher than 2.0 on the scale. This is the standard BC AHS index calculation method.
Sample Size	The target sample for the BC AHS was all students enrolled in the 1,760 classrooms, stratified by grade and Health Service Delivery Area that were selected from participating school districts. A total of 29,315 students completed valid surveys. Please refer to the AHS IV Methodology Fact Sheet for more information on sampling methodology.
Reference Population	The BC AHS covers students in mainstream classes enrolled in public schools in British Columbia from grades 7 through 12. It excludes ESL classes, youth with special health needs, students in French or Chinese immersion programs, students in alternative education programs, homeschooled students, and students in private schools.
Data Availability	AHS Survey IV from 2008; Survey III from 2003; Survey II from 1998; Survey 1 from 1992.
Comprehensiveness	BC AHS data are available only for British Columbia, and only from school districts that participate in the survey (50 of 59 BC school districts participated in the 2008 AHS IV, representing 92% of enrolled students in grades 7–12 in BC).
Treatment of Missing Values	Non-response data are not included in the estimates for each question unless they are relevant categories in the question (e.g., for "knowledge questions, for which "don't know" would be considered a valid response). Missing values are generally less than 3% of respondents on questions throughout the surveys.
Risk Adjustment	Classrooms are sampled to have adequate sample size within grade at the HSDA level, with oversample for school districts that chose signed parental consent, which means in smaller school districts, up to one in three students may be sampled, while in large urban areas, it may be one in fifteen or lower. Data are weighted to account for this differential probability of selection, and adjusted to enrolment across the province.
Rationale for Inclusion	In the youth consultations, this indicator was identified as being very important.
Standards/Benchmarks	The "Picture of Health" does not report the scale results, as psychometrics had not been completed with that report.
Limitations	The three school districts in the Northeast Health Service Delivery Area did not participate in the survey in 2008. Other non-participating school districts included Abbottsford and Chilliwack in the Fraser Valley; Quesnel in Northern Interior; Haida Gwaii and Stikine in Northwest HSDA; and, Central Coast in the North Shore and Coast Garibaldi HSDA.
Comments	

24. Positive Self-rated Mental Health

Definition	Percentage of youth (as defined by ages covered in survey methodology) that report “excellent” and/or “very good” self-rated mental health.
Data source	Statistics Canada—Canadian Community Health Survey GEN Q02B: “In general would you say your mental health is...”
Coding	Excellent/Very good/Good/Fair/Poor Responses were dichotomized: Fair/Poor and Good/Very good/Excellent. See Statistics Canada’s website for more information.
Method of calculation	(Total number of reported “excellent”, “very good” and “good” self-rated mental health for CCHS Q02B／Total number of self-rated mental health responses for Q02B) * 100
Sample Size	The overall 2009–2010 CCHS sample is 131,486. That figure includes two years of surveys—approximately 65,000 surveys are completed annually. Statistics Canada requires a minimum of 500 responses per health region, except where 500 responses would constitute more than 1/20 of the population in that area. Notably, the selection method for individual respondents was designed to ensure over-representation of youth (aged 12–19) in the sample. For complete sample allocation information and methodological documentation, please see the CCHS User Guide: 2010 and 2009–2010 Microdata Files.
Reference Population	The CCHS sample is drawn from the Canadian population aged 12 and over.
Data Availability	CCHS surveys are available from 2001, 2003, 2005, 2007, 2008, 2009, and 2010. Surveys were conducted bi-annually until 2007, when Statistics Canada began to collect information annually.
Comprehensiveness	Q02B is part of the CCHS annual common content, which is the part of the survey that is used every year in every province and health region. Standard population exclusions exist for this survey—i.e., persons in institutions, living on reserve, members of the military and RCMP.
Treatment of Missing Values	The combined (individual and household response rate for 2009–2010 CCHS Survey was 72.3%. For question Q02B, “Don’t know” and “Refused” are acceptable responses, and 2.1% of the respondents chose those responses in 2005.
Risk Adjustment	CCHS data are age and sex adjusted, in order for survey estimates to be representative of the reference population. Statistics Canada’s weighting methodology is available in the CCHS User guide: 2010 and 2009–2010 Microdata Files
Rationale for Inclusion	Self-rated mental health provides a reasonable proxy measure of actual mental health. The evidence review indicates that there is a positive association between self-rated mental health status and quality of life outcomes.
Standards/Benchmarks	In the 2005 Canadian Community Health Survey, 75.3 percent of respondents aged 12–19 reported “excellent” or “very good” mental health. (Excellent: 40.2%, Very Good: 35.1%)
Limitations	Interviewers are required to obtain parental consent prior to interviewing youths aged 12–15. If the youth could not be interviewed in private, the interview was coded as a refusal.
Comments	As response rates tend to vary by age groups, it will be important to assess the degree of non-response for the relevant age group to determine if there are sufficient responses upon which to base the measure.

25. Positive Life Satisfaction

Definition	Percentage of B.C. youth aged 12 to 18 in British Columbia who report being "satisfied" or "very satisfied" with their lives.
Data source	Statistics Canada—Canadian Community Health Survey GEN Q02A: How do you feel about your life as a whole right now?
Coding	Using a scale of 0 to 10, where 0 means "very dissatisfied" and 10 means "very satisfied", how do you feel about your life as a whole right now? DK—Don't know, RF—Refusal, NS—Not Stated
Method of calculation	(The number of respondents aged 12–19 answering "7" and above for CCHS Q02A/Total number of respondents aged 12–19 for CCHS Q02A) * 100
Sample Size	The overall 2009–2010 CCHS sample is 131,486. That figure includes two years of surveys—approximately 65,000 surveys are completed annually. Statistics Canada requires a minimum of 500 responses per health region, except where 500 responses would constitute more than 1/20 of the population in that area. Notably, the selection method for individual respondents was designed to ensure over-representation of youth (aged 12–19) in the sample. For complete sample allocation information and methodological documentation, please see the CCHS User Guide: 2010 and 2009–2010 Microdata Files.
Reference Population	The CCHS sample is drawn from the Canadian population aged 12 and over.
Data Availability	CCHS surveys are available from 2001, 2003, 2005, 2007, 2008, 2009, and 2010. Surveys were conducted bi-annually until 2007, when Statistics Canada began to collect information annually.
Comprehensiveness	Q02A is part of the CCHS annual common content, which is the part of the survey that is used every year in every province and health region. Standard population exclusions exist for this survey—i.e., persons in institutions, living on reserve, members of the military and RCMP.
Treatment of Missing Values	The combined (individual and household) response rate for 2009–2010 CCHS Survey was 72.3%. For question Q02A, "Don't know" and "Refused" are acceptable responses, but those responses are excluded from the denominator in Statistics Canada's calculation of the estimate.
Risk Adjustment	CCHS data are age and sex adjusted, in order for survey estimates to be representative of the reference population. Statistics Canada's weighting methodology is available in the CCHS User guide: 2010 and 2009–2010 Microdata Files
Rationale for Inclusion	The evidence review indicates that there is a strong correlation between life satisfaction and positive mental health and well-being.
Standards/Benchmarks	The 2010 CCHS survey found that 96.9% of youth aged 12–19 reported that they were "satisfied" or "very satisfied" with their life. It is currently unknown how "satisfied" and "very satisfied" are mapped on to the 0–10 scale noted above. The CANSIM notes indicate that this indicator has been measured using a grouped variable since 2009.
Limitations	Interviewers are required to obtain parental consent prior to interviewing youths aged 12–15. If the youth could not be interviewed in private, the interview was coded as a refusal.
Comments	

26. Suicidal Thoughts

Definition	Percentage of B.C. students in grades 7–12 who report having seriously considered suicide in the past year.
Data source	McCreary Centre Society—BC Adolescent Health Survey Q119: "During the last 12 months, did you ever seriously consider killing yourself (attempting suicide)?"
Coding	Yes/No
Method of calculation	(Number of 2008 AHS IV "Yes" responses to Q119/Total number of responses to Q119) *100
Sample Size	The target sample for the BC AHS was all students enrolled in the 1,760 classrooms, stratified by grade and Health Service Delivery Area that were selected from participating school districts. A total of 29,315 students completed valid surveys. Please refer to the AHS IV Methodology Fact Sheet for more information on sampling methodology.
Reference Population	The BC AHS covers students in mainstream classes enrolled in public schools in British Columbia from grades 7 through 12. It excludes ESL classes, youth with special health needs, students in French or Chinese immersion programs, students in alternative education programs, homeschooled students, and students in private schools.
Data Availability	AHS Survey IV from 2008; Survey III from 2003; Survey II from 1998; Survey 1 from 1992.
Comprehensiveness	BC AHS data are available only for BC, and only from school districts that participate in the survey (50 of 59 BC school districts participated in the 2008 AHS IV, representing 92% of enrolled students in grades 7–12 in BC).
Treatment of Missing Values	Non-response data are not included in the estimates for each question unless they are relevant categories in the question (e.g., for "knowledge questions, for which "don't know" would be considered a valid response). Missing values are generally less than 3% of respondents on questions throughout the surveys.
Risk Adjustment	Classrooms are sampled to have adequate sample size within grade at the HSDA level, with oversample for school districts that chose signed parental consent, which means in smaller school districts, up to one in three students may be sampled, while in large urban areas, it may be one in fifteen or lower. Data are weighted to account for this differential probability of selection, and adjusted to enrolment across the province.
Rationale for Inclusion	While some risk factors for suicide (such as family history) are unlikely to be changed through a policy intervention, the evidence review indicates that "suicidal ideation resulting from psychiatric illness and stressful life events may be amenable to preventative intervention", and the recent decline in youth suicide rates could be attributed to interventions in those situations.
Standards/Benchmarks	The 2008 AHS Survey IV found that 12% of BC youth in grades 7–12 seriously considered suicide in the past year, down from 16% in AHS Survey III (2003).
Limitations	The three school districts in the Northeast Health Service Delivery Area did not participate in the survey in 2008. Other non-participating school districts included Abbottsford and Chilliwack in the Fraser Valley; Quesnel in Northern Interior; Haida Gwaii and Stikine in Northwest HSDA; and, Central Coast in the North Shore and Coast Garibaldi HSDA.
Comments	

27. Suicide Rate

Definition	The rate of child and youth (aged 10–18) suicide per 100,000 population.
Data source	British Columbia Vital Statistics Agency
Coding	Cause of death is coded as suicide, intentional injury.
Method of calculation	(Number of child and youth suicides/Population of British Columbia) * 100,000
Sample Size	This is administrative data, therefore there is no sampling.
Reference Population	The population of British Columbia.
Data Availability	British Columbia has collected the vital statistics necessary to calculate this indicator since 1921.
Comprehensiveness	All deaths in British Columbia are registered with the BC Vital Statistics Agency
Treatment of Missing Values	There are no missing values. All suicides are captured in the BC Vital Statistics database.
Risk Adjustment	These data are reported for the province as a whole; therefore, no risk adjustment (e.g., age and sex standardization) is conducted.
Rationale for Inclusion	Suicide is the second highest cause of death among youth in British Columbia, and any occurrence of suicide is devastating for families and communities. The evidence review indicates that the child and youth suicide rate could be reduced through policy action.
Standards/Benchmarks	81 children and youth died by suicide in British Columbia between January 1, 2003 and December 31, 2007.
Limitations	The number of suicides does not include the number of attempted suicides, and therefore, reflects the extreme cases of youth mental health issues with negative outcomes.
Comments	

28. Most Common Prescription Mental Health Drugs

Definition	Annual incidence of the most common classes of prescription mental health drugs.
Data source	BC PharmaNet Database.
Coding	ATC Level 5 (or appropriate level of coding) to identify class of drug.
Method of calculation	(Counts of the total number of prescriptions for the most common mental health prescription drugs/the number of children or youth in a given age category)
Sample Size	This is administrative data, therefore there is no sampling.
Reference Population	The children and youth population of British Columbia below the age of 19.
Data Availability	Annually
Comprehensiveness	Covers all prescriptions in BC
Treatment of Missing Values	Any missing data are excluded from the calculations.
Risk Adjustment	Data are not risk adjusted.
Rationale for Inclusion	Evidence indicates that there is a general trend towards increased utilization of psychotropic drugs. While risks associated with prescription drugs are offset by therapeutic gains among children and youth who have not responded to evidence-based psychosocial treatments, and who have relatively severe symptoms, there is, as yet, no clear indication whether drugs are being over or under utilized. Including this indicator in the PHO report will provide information that can be used to identify opportunities to better understand utilization patterns.
Standards/Benchmarks	
Limitations	Tracking the number of prescriptions per person provides a rough estimate of the drugs being prescribed most often to treat mental health disorders. The degree to which the volume of prescriptions is “good” or “bad” will depend on a number of factors, such as the intended use of the drug, or the sub-population for which the drug is prescribed. Additional analyses will likely be needed to assess the significance of prescribed drugs to the overall health of the pediatric population in BC.
Comments	

29. Positive Parent Relationship

Definition	Percentage of B.C. students in grades 7–12 who report a positive relationship with their parents, as determined by the BC AHS Family Connectedness Scale.
Data source	McCreary Centre Society—BC Adolescent Health Survey (AHS) Q24 to Q31 from the 2008 BC AHS, which provide information on 3 relationship types: Mother Relationship; Father Relationship; Family Relationship.
Coding	Q24–Q27: Not at all/Very little/Somewhat/Quite a bit/Very much/DK or does not apply Q28: Often or Very True/Sometimes or Somewhat True/Never or Not True/DK or does not apply Q29–Q31: Not at all/Some/A lot
Method of calculation	The scale is the averaged responses of at least 3 of the 11 items, standardized on a 0 to 1 or 0 to 10 scale for the family connectedness score. Please contact the McCreary Centre Society for details on how the results for this scale are calculated and reported.
Sample Size	The target sample for the BC AHS was all students enrolled in the 1,760 classrooms, stratified by grade and Health Service Delivery Area that were selected from participating school districts. A total of 29,315 students completed valid surveys. Please refer to the AHS IV Methodology Fact Sheet for more information on sampling methodology.
Reference Population	The BC AHS covers students in mainstream classes enrolled in public schools in British Columbia from grades 7 through 12. It excludes ESL classes, youth with special health needs, students in French or Chinese immersion programs, students in alternative education programs, homeschooled students, and students in private schools.
Data Availability	AHS Survey IV from 2008
Comprehensiveness	BC AHS data are available only for British Columbia, and only from school districts that participate in the survey (50 of 59 BC school districts participated in the 2008 AHS IV, representing 92% of enrolled students in grades 7–12 in BC).
Treatment of Missing Values	Non-response data are not included in the estimates for each question unless they are relevant categories in the question (e.g., for "knowledge questions, for which "don't know" would be considered a valid response). Missing values are generally less than 3% of respondents on questions throughout the surveys.
Risk Adjustment	Classrooms are sampled to have adequate sample size within grade at the HSDA level, with oversample for school districts that chose signed parental consent, which means in smaller school districts, up to one in three students may be sampled, while in large urban areas, it may be one in fifteen or lower. Data are weighted to account for this differential probability of selection, and adjusted to enrolment across the province.
Rationale for Inclusion	Every child in British Columbia is impacted by their relationship (or lack thereof) with parental figures. The evidence review indicates that a close parent-child relationship is associated with "lower levels of adolescent distress and suicide involvement, violence, substance abuse, and age of sexual debut".
Standards/Benchmarks	The 2008 AHS survey found that connectedness to mother and father figures was higher for 12- and 13-year-olds than for those aged 14 to 18 years old. No specific percentages were published.
Limitations	The three school districts in the Northeast Health Service Delivery Area did not participate in the survey in 2008. Other non-participating school districts included Abbottsford and Chilliwack in the Fraser Valley; Quesnel in Northern Interior; Haida Gwaii and Stikine in Northwest HSDA; and, Central Coast in the North Shore and Coast Garibaldi HSDA.
Comments	The Family Connectedness scale is often used as a predictor or protective factor in analytical models of issues such as factors related to children who run away from home.

30. Trusting Adult Relationship

Definition	Percentage of B.C. students in grades 7–12 who report having a trusting relationship with an adult outside of their family.
Data source	McCreary Centre Society—BC Adolescent Health Survey Q115: "If you were having a serious problem, is there an adult who is NOT in your family that you would feel okay talking to?"
Coding	Yes/No
Method of calculation	(Number of AHS respondents indicating "Yes" for Q115/Number of AHS respondents for Q115) * 100
Sample Size	The target sample for the BC AHS was all students enrolled in the 1,760 classrooms, stratified by grade and Health Service Delivery Area that were selected from participating school districts. A total of 29,315 students completed valid surveys. Please refer to the AHS IV Methodology Fact Sheet for more information on sampling methodology.
Reference Population	The BC AHS covers students in mainstream classes enrolled in public schools in British Columbia from grades 7 through 12. It excludes ESL classes, youth with special health needs, students in French or Chinese immersion programs, students in alternative education programs, homeschooled students, and students in private schools.
Data Availability	AHS Survey IV from 2008; Survey III from 2003; Survey II from 1998; Survey 1 from 1992.
Comprehensiveness	BC AHS data are available only for British Columbia, and only from school districts that participate in the survey (50 of 59 BC school districts participated in the 2008 AHS IV, representing 92% of enrolled students in grades 7–12 in BC).
Treatment of Missing Values	Non-response data are not included in the estimates for each question unless they are relevant categories in the question (e.g., for "knowledge questions, for which "don't know" would be considered a valid response). Missing values are generally less than 3% of respondents on questions throughout the surveys.
Risk Adjustment	Classrooms are sampled to have adequate sample size within grade at the HSDA level, with oversample for school districts that chose signed parental consent, which means in smaller school districts, up to one in three students may be sampled, while in large urban areas, it may be one in fifteen or lower. Data are weighted to account for this differential probability of selection, and adjusted to enrolment across the province.
Rationale for Inclusion	The evidence review recommended this indicator for inclusion. The review found evidence to indicate that extrafamilial adult relationships can have a positive impact on childrens' social-emotional health, can reduce risk taking behaviours, and can improve academic achievement.
Standards/Benchmarks	The 2008 AHS IV found that 56% of youths would feel comfortable seeking support from an adult outside of their family (i.e., 56% answered "yes" to Q115).
Limitations	The three school districts in the Northeast Health Service Delivery Area did not participate in the survey in 2008. Other non-participating school districts included Abbottsford and Chilliwack in the Fraser Valley; Quesnel in Northern Interior; Haida Gwaii and Stikine in Northwest HSDA; and, Central Coast in the North Shore and Coast Garibaldi HSDA.
Comments	

31. School Connectedness Rate

Definition	Percentage of B.C. students in grades 7–12 who report a high level of school connectedness as determined by the BC AHS School Connectedness Scale
Data source	McCreary Centre Society—BC Adolescent Health Survey Q39: "How much do you feel that your teachers care about you?" Q40: "Since school started this year, how often have you had trouble getting along with your teachers?" Q42: "How much do you agree or disagree with the following statements? (1) I feel like I am a part of my school. (2) I am happy to be at my school. (3) The teachers at my school treat me fairly. (4) I feel safe at my school.
Coding	Q39: Not at all/Very little/Somewhat/Quite a bit/Very much Q40: Never/Just a few times/About once a week/Almost every day/Every day Q42: Strongly agree/Agree/Neither agree nor disagree/Disagree/Strongly disagree
Method of calculation	The scale is the averaged responses of at least 5 of the 6 items, standardized on a 0 to 1 or 0 to 10 scale for the school connectedness score. Please contact the McCreary Centre Society for details on how the results for this scale are calculated and reported.
Sample Size	The target sample for the BC AHS was all students enrolled in the 1,760 classrooms, stratified by grade and Health Service Delivery Area that were selected from participating school districts. A total of 29,315 students completed valid surveys. Please refer to the AHS IV Methodology Fact Sheet for more information on sampling methodology.
Reference Population	The BC AHS covers students in mainstream classes enrolled in public schools in British Columbia from grades 7 through 12. It excludes ESL classes, youth with special health needs, students in French or Chinese immersion programs, students in alternative education programs, homeschooled students, and students in private schools.
Data Availability	AHS Survey IV from 2008; Survey III from 2003; Survey II from 1998; Survey 1 from 1992.
Comprehensiveness	BC AHS data are available only for British Columbia, and only from school districts that participate in the survey (50 of 59 BC school districts participated in the 2008 AHS IV, representing 92% of enrolled students in grades 7–12 in BC).
Treatment of Missing Values	Non-response data are not included in the estimates for each question unless they are relevant categories in the question (e.g., for "knowledge questions, for which "don't know" would be considered a valid response). Missing values are generally less than 3% of respondents on questions throughout the surveys.
Risk Adjustment	Classrooms are sampled to have adequate sample size within grade at the HSDA level, with oversample for school districts that chose signed parental consent, which means in smaller school districts, up to one in three students may be sampled, while in large urban areas, it may be one in fifteen or lower. Data are weighted to account for this differential probability of selection, and adjusted to enrolment across the province.
Rationale for Inclusion	This indicator applies to a high number of BC children, approximately 30% of the pediatric cohort. The evidence review indicated that school connectedness is associated with lower levels of emotional distress, delinquent behaviour and substance abuse.
Standards/Benchmarks	Q42: 41% reported always feeling safe at school. Other elements of this question were not reported to the public.
Limitations	The three school districts in the Northeast Health Service Delivery Area did not participate in the survey in 2008. Other non-participating school districts included Abbottsford and Chilliwack in the Fraser Valley; Quesnel in Northern Interior; Haida Gwaii and Stikine in Northwest HSDA; and, Central Coast in the North Shore and Coast Garibaldi HSDA.
Comments	This scale is usually used in multivariate models and odds ratios in the community reports, and therefore is not usually numerically reported to keep it in lay terms; however, these data are available upon request. Percentages are not usually reported, as it's a continuous scale, but a "high school connectedness" percent might be derived from setting a criterion. There has been a lot of evolution in the definition and measurement of school connectedness since this scale was first included in the BC AHS in 1998. It may be shifted for the 2013 survey, although the construct will remain a key part of the survey measurement, as it is one of the most potent protective factors included in the survey.

32. Community Connectedness Rate

Definition	Percentage of B.C. students in grades 7–12 who report a "somewhat strong" or "very strong" sense of community belonging.
Data source	Statistics Canada—Canadian Community Health Survey GEN Q10: How would you describe your sense of belonging to your local community? Would you say it is:"
Coding	(1) Very strong, (2) Somewhat strong, (3) Somewhat weak, (4) Very weak, DK—Don't know, RF—Refused
Method of calculation	(Number of respondents in British Columbia aged 12–19 indicating a "very strong" or "somewhat strong" sense of belonging to their local community for CCHS Q10/Total number of respondents in British Columbia aged 12–19 for CCHS Q10) *100
Sample Size	The overall 2009–2010 CCHS sample is 131,486. That figure includes two years of surveys—approximately 65000 surveys are completed annually. Statistics Canada requires a minimum of 500 responses per health region, except where 500 responses would constitute more than 1/20 of the population in that area. Notably, the selection method for individual respondents was designed to ensure over-representation of youth (aged 12–19) in the sample. For complete sample allocation information and methodological documentation, please see the CCHS User Guide: 2010 and 2009–2010 Microdata Files.
Reference Population	The CCHS sample is drawn from the Canadian population aged 12 and over.
Data Availability	CCHS surveys are available from 2001, 2003, 2005, 2007, 2008, 2009, and 2010. Surveys were conducted bi-annually until 2007, when Statistics Canada began to collect information annually.
Comprehensiveness	Q10 is part of the CCHS annual common content, which is the part of the survey that is used every year in every province and health region.
Treatment of Missing Values	The combined (individual and household response rate for the 2009–2010 CCHS Survey was 72.3%. For question Q10 specifically, "Don't know" and "Refused" are acceptable responses, but those responses are excluded from the denominator in Statistics Canada's calculation of the estimate.
Risk Adjustment	CCHS data are age and sex adjusted, in order for survey estimates to be representative of the reference population. Statistics Canada's weighting methodology is available in the CCHS User guide: 2010 and 2009–2010 Microdata Files
Rationale for Inclusion	Statistics Canada indicates that there is a high correlation between a sense of community belonging and physical and mental health. The evidence review also recommended this indicator as a core indicator of child and youth health and well-being, stating that feeling safe and part of a community positively impacts self-esteem, academic grades, and emotional health.
Standards/Benchmarks	In the 2009/2001 CCHS data, 78.8% of youths aged 12–19 in British Columbia reported having a "somewhat strong" or "very strong" sense of belonging to their local community.
Limitations	Interviewers are required to obtain parental consent prior to interviewing youths aged 12–15. If the youth could not be interviewed in private, the interview was coded as a refusal.
Comments	

33. Physical Abuse/Neglect

Definition	Non-recurrence of Child Neglect and/or Abuse by Family
Data source	Ministry of Child and Family Development—Public Reporting of Performance Measures
Coding	There are three measures: 1. Non-recurrence of child neglect and/or abuse by family (expressed as a percent) 2. The number of families with no recurrence 3. The number of families with a finding of "in need of protection"
Method of calculation	1. (The number of families with no recurrence of child neglect and/or abuse by family/the number of families investigated with protection findings in the previous 12 months) * 100 2. Total of all families for which there was no recurrence of abuse/neglect (the numerator) 3. Total of all families with a protection order (the denominator)
Sample Size	As this counts reported cases, there is no sampling involved.
Reference Population	The number of families investigated with protection findings from the previous year.
Data Availability	Annually
Comprehensiveness	Covers all *reported* cases of abuse/neglect.
Treatment of Missing Values	Only reported cases are included, therefore there are no missing values.
Risk Adjustment	As this is administrative data, no adjustments are made.
Rationale for Inclusion	The evidence review identified significant negative effects on children's health and well-being related to child physical abuse/neglect.
Standards/Benchmarks	December 2010: (1) 80.5% Non-recurrence rate; (2) 2,464 number of families with no recurrence; (3) 3,061 number of families with a finding of "in need of protection".
Limitations	These measures address reported cases of child physical abuse/neglect by family only, excluding non-family abuse/neglect and unreported cases of abuse/neglect; and is, therefore, underestimates total child physical abuse/neglect.
Comments	These combined measures identify how well the ministry is doing at reducing further incidents of abuse and/or neglect.

34. Sexual Abuse

Definition	Incidence of child sexual abuse as defined by the Ministry of Children and Family Development
Data source	Ministry of Child and Family Development
Coding	Cases with a finding of sexual abuse
Method of calculation	Case findings
Sample Size	n/a
Reference Population	The number of families investigated for child sexual abuse.
Data Availability	Annually
Comprehensiveness	Covers all *reported* cases of abuse.
Treatment of Missing Values	n/a
Risk Adjustment	n/a
Rationale for Inclusion	The evidence review identified significant negative effects on children's health and well-being related to child sexual abuse.
Standards/Benchmarks	
Limitations	
Comments	The Ministry of Children and Family Development does not report out on sexual abuse as a public performance measure. Incidence figures for child sexual abuse will have to be specifically requested from the Ministry.

35. Children in Care Rate

Definition	Rate of children in care at fiscal year end, expressed as a rate per 1,000 children.
Data source	Ministry of Children and Family Development—Public Reporting of Performance Measures.
Coding	In-care/Not in-care (as of March 31 of the reference year, unless otherwise noted)
Method of calculation	(The number of children in care as of March 31 of the reference year／The total number of children in the province at the most recent reference period) * 1,000
Sample Size	This is administrative data, therefore covers the entire pediatric population.
Reference Population	This refers to the approximately 9,000 children in care in BC (as of June, 2010)
Data Availability	Annually
Comprehensiveness	Covers all children in care in BC, as reported by MCFD
Treatment of Missing Values	As this is administrative data, there are no missing values.
Risk Adjustment	There is no risk adjustment done for administrative data.
Rationale for Inclusion	The evidence review confirmed that children in care are more likely to experience negative educational outcomes, mental health issues, behavioural and emotional problems and developmental delay.
Standards/Benchmarks	The CIC rate for 2010/2011 was 9.4 per 1,000 children
Limitations	MCFD reports on the CIC rate for Aboriginal and Non-Aboriginal children. Therefore, it may be preferable to report the CIC both rates.
Comments	Performance reports are available on the MCFD website.

36. Discrimination Rate

Definition	Percentage of B.C. students in grades 7–12 who report having been discriminated against or treated unfairly because of their race or skin colour in the past year.
Data source	McCreary Centre Society—BC Adolescent Health Survey Q134: "During the past 12 months, have you been discriminated against or treated unfairly because of your race or skin colour?
Coding	Q134: Yes/No
Method of calculation	(Number of AHS IV respondents who answered "Yes" to Q134/Total number of respondents for Q134) *100
Sample Size	The target sample for the BC AHS was all students enrolled in the 1,760 classrooms, stratified by grade and Health Service Delivery Area that were selected from participating school districts. A total of 29,315 students completed valid surveys. Please refer to the AHS IV Methodology Fact Sheet for more information on sampling methodology.
Reference Population	The BC AHS covers students in mainstream classes enrolled in public schools in British Columbia from grades 7 through 12. It excludes ESL classes, youth with special health needs, students in French or Chinese immersion programs, students in alternative education programs, homeschooled students, and students in private schools.
Data Availability	AHS Survey IV from 2008; Survey III from 2003; Survey II from 1998; Survey 1 from 1992.
Comprehensiveness	BC AHS data are available only for British Columbia, and only from school districts that participate in the survey (50 of 59 BC school districts participated in the 2008 AHS IV, representing 92% of enrolled students in grades 7–12 in BC).
Treatment of Missing Values	Non-response data are not included in the estimates for each question unless they are relevant categories in the question (e.g., for "knowledge questions, for which "don't know" would be considered a valid response). Missing values are generally less than 3% of respondents on questions throughout the surveys.
Risk Adjustment	Classrooms are sampled to have adequate sample size within grade at the HSDA level, with oversample for school districts that chose signed parental consent, which means in smaller school districts, up to one in three students may be sampled, while in large urban areas, it may be one in fifteen or lower. Data are weighted to account for this differential probability of selection, and adjusted to enrolment across the province.
Rationale for Inclusion	In consultation, young people indicated that discrimination was equally as relevant to their well-being as bullying and other aspects of social interaction. Evidence suggests that there is an important association between experiences of discrimination and lower self-esteem and, in some cases, more serious problem behaviours.
Standards/Benchmarks	
Limitations	The three school districts in the Northeast Health Service Delivery Area did not participate in the survey in 2008. Other non-participating school districts included Abbottsford and Chilliwack in the Fraser Valley; Quesnel in Northern Interior; Haida Gwaii and Stikine in Northwest HSDA; and, Central Coast in the North Shore and Coast Garibaldi HSDA.
Comments	

37. Bullying Rate

Definition	Percentage of B.C. students in grades 7–12 who report having been bullied at school, on the way to and from school, or over the internet in the past year.
Data source	McCreary Centre Society—BC Adolescent Health Survey **Q132:** "During the past 12 months, while at school or on the way to and from school, how many times did another youth: (1) Tease you or say something personal about you that made you feel bad or extremely uncomfortable? (2) Keep you out of things on purpose, exclude you from their group of friends, or completely ignore you? (3) Physically attack or assault you? **Q138:** In the past 12 months, how many times did other people bully or pick on you through the internet?
Coding	**Q132:** For all three parts: Never/Once/2 or more times **Q138:** Never/Once/2 or more times
Method of calculation	(Number of AHS IV respondents who answered "Once" or "2 or more times" for any of the four parts of Q132 or Q138/Total number of respondents for Q132 and Q138) *100
Sample Size	The target sample for the BC AHS was all students enrolled in the 1,760 classrooms, stratified by grade and Health Service Delivery Area that were selected from participating school districts. A total of 29,315 students completed valid surveys. Please refer to the AHS IV Methodology Fact Sheet for more information on sampling methodology.
Reference Population	The BC AHS covers students in mainstream classes enrolled in public schools in British Columbia from grades 7 through 12. It excludes ESL classes, youth with special health needs, students in French or Chinese immersion programs, students in alternative education programs, homeschooled students, and students in private schools.
Data Availability	AHS Survey IV from 2008; Survey III from 2003; Survey II from 1998; Survey 1 from 1992.
Comprehensiveness	BC AHS data are available only for British Columbia, and only from school districts that participate in the survey (50 of 59 BC school districts participated in the 2008 AHS IV, representing 92% of enrolled students in grades 7–12 in BC).
Treatment of Missing Values	Non-response data are not included in the estimates for each question unless they are relevant categories in the question (e.g., for "knowledge questions, for which "don't know" would be considered a valid response). Missing values are generally less than 3% of respondents on questions throughout the surveys.
Risk Adjustment	Classrooms are sampled to have adequate sample size within grade at the HSDA level, with oversample for school districts that chose signed parental consent, which means in smaller school districts, up to one in three students may be sampled, while in large urban areas, it may be one in fifteen or lower. Data are weighted to account for this differential probability of selection, and adjusted to enrolment across the province.
Rationale for Inclusion	The evidence review indicates a negative association between bullying and child health across a number of areas. Bullied children show higher levels of psychological distress (anxiety, depression, PTSD), and decreased levels of self-control, self-worth, and social confidence. Studies have found that bullied children are more likely to abuse substances later in life.
Standards/Benchmarks	**Q132:** Not available to the public. Presumably, these figures could be obtained from the McCreary Centre Society **Q138:** 17% of AHS IV respondents had been bullied or picked on through the internet in the past year. Ministry of Education School Satisfaction Survey: 9% of students reported being bullied in 2009/2010.
Limitations	The three school districts in the Northeast Health Service Delivery Area did not participate in the survey in 2008. Other non-participating school districts included Abbottsford and Chilliwack in the Fraser Valley; Quesnel in Northern Interior; Haida Gwaii and Stikine in Northwest HSDA; and, Central Coast in the North Shore and Coast Garibaldi HSDA.
Comments	

38. Rate of Youth Charged and Convicted

Definition	Two rates will be reported: 1. Youth Justice Community Rate per 1,000 Youth Population. 2. Youth Justice Custody Rate per 1,000 Youth Population.
Data source	Ministry of Children and Family Development—Public Reporting of Performance Measures. Data are obtained from an internal reporting system and P.E.O.P.L.E. 35 from BC Stats.
Coding	
Method of calculation	1. (The number of youth age 12–17 receiving community support and services through the Youth Justice System in BC/the total number of youth age 12–17 in BC for the reference year) * 1,000 2. (The number of youth age 12–17 in custody through the Youth Justice System in BC/the total number of youth age 12–17 in BC for the reference year) * 1,000
Sample Size	This is based on administrative data, so there is no sample.
Reference Population	All youth aged 12–17 in BC
Data Availability	Annually
Comprehensiveness	Covers all youth aged 12–17 in BC, as reported by MCFD
Treatment of Missing Values	This is a census of all youth involved with the youth justice system, from administrative data. Therefore, there are no missing values.
Risk Adjustment	No risk adjustment is necessary as these indicators are based on a census of all youth involved with the youth justice system.
Rationale for Inclusion	Research shows that incarcerated youth report higher incidence of abusive families, addictions, physical and mental health challenges, exposure to family violence, and experiences of being disconnected from family and community. Over half of youth in custody have been shown to be diagnosed with a mental health disorder and are up to 10 times more likely to suffer from psychosis than the general population.
Standards/Benchmarks	In 2009/2010, the Youth Justice Community rate was 7.46, and the Youth Justice Custody rate was 0.39.
Limitations	As this focuses on youth crime, it excludes those in the pediatric cohort aged 18 and 19, who are processed through the adult courts and legal system.
Comments	This measure shows the rate per 1,000 young people aged 12–17 who receive support and services through the Youth Justice system in BC Performance reports are available on the MCFD website.

39. After School Activities

Definition	Composite index of dimension 5 of the MDI: Constructive Use of After-School Time
Data source	MDI—Dimension 5: Constructive Use of After-School Time
Coding	This is a new indicator of middle childhood. Contact the Human Early Learning Program at UBC for current calculation and interpretation of the index
Method of calculation	The MDI questionnaire is optional. For those children/families who wish to participate, it is completed during school hours and takes approximately two class periods to complete. All questions are read out loud by a classroom teacher so that the children all clearly understand the question.
Sample Size	Sample size is expanding as greater numbers of school districts are participating in the MDI.
Reference Population	Grade 4 students in participating schools. The instrument is being piloted with grade 7 students in 2012/2013
Data Availability	The MDI was first piloted in 2006 in 8 lower mainland schools. Uptake of the survey has continued to expand around the province since.
Comprehensiveness	The MDI questionnaire is optional. For those children/families who wish to participate, it is completed during school hours and takes approximately two class periods to complete. All questions are read out loud by a classroom teacher so that the children all clearly understand the question. The MDI has been expanding each year to more school districts and classrooms. Only data for children in participating classrooms is captures
Treatment of Missing Values	
Risk Adjustment	
Rationale for Inclusion	The middle years of childhood (ages 6 to 12) represent the second stage in early human development, between early childhood and adolescence. As well as being an outcome indicator of early childhood experiences, middle childhood is also a powerful predictor of adolescent adjustment and success.
Standards/Benchmarks	
Limitations	
Comments	The Middle Years Development Instrument (MDI) is a self-report questionnaire completed by children in Grade 4. The questionnaire includes 71 questions related to the five areas of development that are strongly linked to well-being, health and academic achievement. This school year (2012–13) the MDI is being piloted for Grade 7 students.

40. Children Living in Low Income Families

Definition	Percentage of children living in households that report annual household after tax income below the Low Income Cutoff as defined by Statistics Canada.
Data source	Statistics Canada, Census (2011 if available). Starting in 2011, income data are available from the National Housing Survey, which replaces the income questions in the Census.
Coding	With permission from Census respondents, income data reported in the Census is obtained directly from linkages with the Canada Revenue Agency (CRA).
Method of calculation	(Number of children in households with below-LICO annual household income/number of children in all households) * 100
Sample Size	Prior to 2011, data were obtained using the Long Form Census, which is not a sample. After 2011, income data are obtained using the NHS. Sampling for the NHS
Reference Population	All households with children aged 19 and under.
Data Availability	Before 2011—Census of Canada. 2011 and beyond, National Housing Survey.
Comprehensiveness	All households in BC are covered by the Census. Permission to link Census data to the CRA file was granted by 79.2% of British Columbia Census respondents, and 88.1% of records were successfully retrieved.
Treatment of Missing Values	• Missing values are either imputed based on (a) survey responses for a particular respondent in a previous month (if available) or (b) donor records (i.e., respondents with similar characteristics—referred to as "hot deck" imputation). • Non-response to the LFS is estimated to be approximately 10% of all sampled households. A weighting adjustment is made to account for non-responding households.
Risk Adjustment	Survey data are adjusted to account for the age and sex distribution within a given province, based on the 2001 Census population distribution.
Rationale for Inclusion	Household income reflects economic opportunity for children in the household. Those living in households with below-LICO income are more likely to be disadvantaged in terms of housing conditions, food security, access to services and physical activity opportunities, and other factors that can positively influence well-being and development.
Standards/Benchmarks	
Limitations	Given that two in ten Census respondents do not give Statistics Canada permission to link to their CRA file, there is some under-reporting for BC.
Comments	The cut-offs are updated annually when the Consumer Price Index is updated, so tracking this indicator on an annual basis is possible with updated CPI information from Statistics Canada.

41. Parental Unemployment Rate

Definition	The percent of children for whom at least one parent reports unemployment in the previous year.
Data source	Statistics Canada: Labour Force Survey (LFS)
Coding	The LFS uses a series of questions to determine unemployment status. The main questions are as follows: • Last week, did (insert name) work at a job or business? (Yes/No) • Last week, did (insert name) have a job or business from which he/she was absent? (Yes/No) • Has he/she ever worked at a job or business? (Yes/No) • When did he/she last work? (If not within past year, individual is streamed out of LFS) • What was the main reason (insert name) was absent from work last week? (e.g., Temporary Layoff; Seasonal Layoff; Casual Job, no work available) • What was the main reason (insert name) stopped working at that (job/business)? • In the four weeks ending last Saturday, did (insert name) do anything to find work? (Yes/No) • What did he/she do to find work in those 4 weeks?
Method of calculation	(The number of children living in households in which at least one parent reports being unemployed during the previous year/The number of children in all households) * 100 The percentage of the population that is unemployment is calculated in the following manner: (Number of people reporting unemployment in the reference period/ number of people not currently employed and actively looking for work) * 100
Sample Size	The LFS sample is a stratified, multi-stage cluster design of households. As of December 2010, the total sample for BC was 6,452 households.
Reference Population	The civilian, non-institutionalized population age 15 and over.
Data Availability	Estimates of unemployment are available on a monthly basis from the LFS.
Comprehensiveness	Excludes persons living on reserves or other Aboriginal settlements in the provinces; full-time members of the Canadian Armed Forces; and, the institutionalized population (combined these account for less than 2% of the total Canadian population).
Treatment of Missing Values	• Missing values are either imputed based on (a) survey responses for a particular respondent in a previous month (if available) or (b) donor records (i.e., respondents with similar characteristics—referred to as "hot deck" imputation). • Non-response to the LFS is estimated to be approximately 10% of all sampled households. A weighting adjustment is made to account for non-responding households.
Risk Adjustment	Survey data are adjusted to account for the age and sex distribution within a given province, based on the 2001 Census population distribution.
Rationale for Inclusion	Parental unemployment is a significant risk for decreased economic and material well-being. Unemployment, especially male unemployment, introduces psychological stresses into a home (and into parenting) that may result in: short-term maltreatment or neglect of children; the development of pediatric obesity and longer-term conditions such as heart disease once the offspring grow into adulthood.
Standards/Benchmarks	
Limitations	Standard coverage limitations for the LFS or any population based survey apply to this indicator.
Comments	Details on the LFS methodology are available in the following two locations on Statistics Canada's website: • General information (e.g., data collection, missing values, non-response) • Detailed information (e.g., sampling details)

42. Children Living in Families with Poor Housing Conditions

Definition	Percentage of children living in families with core housing need, as identified by Canada Mortgage and Housing Corporation.
Data source	Census of Canada.
Coding	See comments below.
Method of calculation	(Number of children in households that include children and are classified as "in core housing need" as per CMHC guidelines/number of children in households that include children) * 100
Sample Size	All households in BC.
Reference Population	All children, aged 0–19 in BC.
Data Availability	1991–2006. 2011 Census data on household composition should be available in late 2012.
Comprehensiveness	All households in BC.
Treatment of Missing Values	Follows Statistics Canada's edit and imputation standards.
Risk Adjustment	Data are not risk adjusted as every household completes the Census questionnaire.
Rationale for Inclusion	Housing quality is a core measure of well-being for children. If a home is not suitable in terms of space, or does not meet at least minimum quality standards in terms of condition and repair, or is not affordable, a child's physical and emotional health are at risk.
Standards/Benchmarks	In 2006, 12.0% of all family households (those including children, and either single or two-parent situations) were classified as living in core housing need.
Limitations	These data are limited by the degree to which Census respondents' descriptions of the quality of their housing conditions (e.g., needing major repairs) relative to a standard as set out by the Canadian Mortgage and Housing Corporation.
Comments	A household is said to be in core housing need if its housing falls below at least one of the adequacy, affordability or suitability, standards and it would have to spend 30% or more of its total before-tax income to pay the median rent of alternative local housing that is acceptable (meets all three housing standards). More information is available here. **Adequate housing** does not require any major repairs, according to residents. **Affordable housing** costs less than 30% of before-tax household income. **Suitable housing** has enough bedrooms for the size and make-up of resident households, according to National Occupancy Standard (NOS) requirements.

43. Unmet Food Needs

Definition	Percentage of B.C. students in grades 7–12 who report that they go to bed hungry due to food insufficiency in their household.
Data source	McCreary Centre Society—BC Adolescent Health Survey Q19: "Some young people go to bed hungry because there is not enough food at home. How often does this happen to you?"
Coding	Always/Often/Sometimes/Never
Method of calculation	(Number of BC AHS IV respondents who responded "Always/Often/or Sometimes" for Q19/Total number of BC AHS IV respondents for Q19) * 100
Sample Size	The target sample for the BC AHS was all students enrolled in the 1,760 classrooms, stratified by grade and Health Service Delivery Area that were selected from participating school districts. A total of 29,315 students completed valid surveys. Please refer to the AHS IV Methodology Fact Sheet for more information on sampling methodology.
Reference Population	The BC AHS covers students in mainstream classes enrolled in public schools in British Columbia from grades 7 through 12. It excludes ESL classes, youth with special health needs, students in French or Chinese immersion programs, students in alternative education programs, homeschooled students, and students in private schools.
Data Availability	BC AHS Survey IV from 2008.
Comprehensiveness	BC AHS data are available only for British Columbia, and only from school districts that participate in the survey (50 of 59 BC school districts participated in the 2008 BC AHS IV, representing 92% of enrolled students in grades 7–12 in BC).
Treatment of Missing Values	Non-response data are not included in the estimates for each question unless they are relevant categories in the question (e.g., for "knowledge questions, for which "don't know" would be considered a valid response). Missing values are generally less than 3% of respondents on questions throughout the surveys.
Risk Adjustment	Classrooms are sampled to have adequate sample size within grade at the HSDA level, with oversample for school districts that chose signed parental consent, which means in smaller school districts, up to one in three students may be sampled, while in large urban areas, it may be one in fifteen or lower. Data are weighted to account for this differential probability of selection, and adjusted to enrolment across the province.
Rationale for Inclusion	The evidence review found strong evidence for an association between food insufficiency and negative outcomes for children and adolescents. The BC AHS IV survey found that children in BC who went to bed hungry were more likely to have fair/poor health, more likely to exhibit suicidal ideation, and more likely to attempt suicide.
Standards/Benchmarks	In the 2008 BC AHS IV, 89% reported never going to bed hungry. 9% experienced hunger sometimes, and 2% went to bed hungry often or always. Some groups have higher levels of food insecurity, such as youth with recent care experience (see most recent McCreary report, Fostering Potential).
Limitations	The three school districts in the Northeast Health Service Delivery Area did not participate in the survey in 2008. Other non-participating school districts included Abbottsford and Chilliwack in the Fraser Valley; Quesnel in Northern Interior; Haida Gwaii and Stikine in Northwest HSDA; and, Central Coast in the North Shore and Coast Garibaldi HSDA.
Comments	Although 2008 was the first year this question was included in the BC AHS, it has proven to be an important measure of health inequity, and the McCreary Centre Society intends to keep it in the 2013 survey.

44. Idle Youth Rate

Definition	Percentage of youth aged 15 to 19 who are not enrolled in school or employed (NEET)
Data source	Statistics Canada, Labour Force Survey
Coding	15 to 19 year old respondents identifying that they are not enrolled in school and not employed
Method of calculation	Calculated as a percentage of all persons aged 15 to 19
Sample Size	As of December 2011 the sample size for BC was 6,650 households
Reference Population	Survey is administered to all persons 15 years and older.
Data Availability	Monthly data through the Statistics Canada, Labour Force Survey. The Labour Force Survey(LFS) began in 1945
Comprehensiveness	The survey excludes persons living on reserves and other Aboriginal settlements in the provinces; full-time members of the Canadian Forces and the institutionalized population. These groups together represent an exclusion of approximately 2% of the population aged 15 and over.
Treatment of Missing Values	For households non-responding to the LFS, a weight adjustment is applied to account for non-responding households.
Risk Adjustment	
Rationale for Inclusion	Concern was raised that NEET youth would become discouraged, disengaged and socially excluded. A British study showed and were subsequently more likely to have a poor labour market experience, depression, early parenthood and poor housing.
Standards/Benchmarks	In 2011, 8% of Canadians aged 15 to 19 were identified as neither enrolled or employed (NEET)
Limitations	Excluded from the survey's coverage are: persons living on reserves and other Aboriginal settlements in the provinces; full-time members of the Canadian Forces and the institutionalized population. These groups together represent an exclusion of approximately 2% of the population aged 15 and over. This is a significant limitation as persons living on reserves are more likely to leave school early and unemployment rates are higher.
Comments	The concept of idle youth originated in Great Britain and has recently caught the attention of other G8 countries

45. Communications Skills

Definition	Percentage of B.C. kindergarten students (enrolled in public school) identified as "vulnerable" based on the Communication Skills and General Knowledge sub-domain of the Language and Cognitive Skills Domain of the Early Development Instrument (EDI).
Data source	The Communication Skills and General Knowledge Sub-Domain of the EDI
Coding	"Very Good/Good", "Average", "Poor/Very Poor", "Don't Know"
Method of calculation	EDI results are based on proprietary calculations from the Offord Centre. Aggregate data are available from the Human Early Learning Partnership (HELP) at UBC.
Sample Size	The EDI is a census style data collection tool, therefore there is no sampling conducted.
Reference Population	All BC children enrolled in public school kindergarten during the reference year.
Data Availability	Wave 2 (04/05 to 06/07) n=41,170; Wave 3 (07/08 to 08/09) n=37,398; Wave 4 (09/10 to 10/11) n=46,318
Comprehensiveness	Covers kindergarten students enrolled in public schools at the time of completion, usually at the beginning of the school year.
Treatment of Missing Values	To be included in the calculation, no more than 30% of data can be missing from a single record on the entire set of sub-domain questions.
Risk Adjustment	Data are not adjusted in any way for reporting as the entire population is covered.
Rationale for Inclusion	Language skills, particularly verbal skills, are of fundamental importance for human development. Achievement in early elementary school is comprised of development focused skills, which address a student's readiness to learn. Evidence suggests that identifying factors in this early stage of cognitive development is important to understanding patterns in achievement in later schooling.
Standards/Benchmarks	Wave 2 = 14.0%/Wave 3 = 13.2%/Wave 4 = 13.7%
Limitations	EDI measures exclude students enrolled in private schools. Full coverage for the province is available starting in
Comments	

46. Pro-social Behaviour Skills

Definition	Percentage of B.C. kindergarten students (enrolled in public school) identified as "vulnerable" based on the Emotional Maturity sub-domain of the Social and Emotional Development Doman of the Early Development Instrument (EDI).
Data source	The Emotional Maturity Sub-Domain of the EDI
Coding	"Very Good/Good", "Average", "Poor/Very Poor", "Don't Know" OR "Often/Very True", "Sometimes/Somewhat True", "Never/Not True", "Don't Know", depending on the specific questionnaire item.
Method of calculation	EDI results are based on proprietary calculations from the Offord Centre. Aggregate data are available from the Human Early Learning Partnership (HELP) at UBC.
Sample Size	The EDI is a census style data collection tool, therefore there is no sampling conducted.
Reference Population	All BC children enrolled in public school kindergarten during the reference year.
Data Availability	Wave 2 (04/05 to 06/07) n=41,170; Wave 3 (07/08 to 08/09) n=37,398; Wave 4 (09/10 to 10/11) n=46,318
Comprehensiveness	Covers kindergarten students enrolled in public schools at the time of completion, usually at the beginning of the school year.
Treatment of Missing Values	To be included in the calculation, no more than 30% of data can be missing from a single record on the entire set of sub-domain questions.
Risk Adjustment	Data are not adjusted in any way for reporting as the entire population is covered.
Rationale for Inclusion	Social skills are of fundamental importance for human development. Achievement in early elementary school is comprised of development focused skills, which address a student's readiness to learn. Evidence suggests that identifying factors in this early stage of cognitive development is important to understanding patterns in achievement in later schooling.
Standards/Benchmarks	Wave 2 = 11.7%/Wave 3 = 12.4%/Wave 4 = 13.8%
Limitations	EDI measures exclude students enrolled in private schools.
Comments	

47. Child Literacy

Definition	Percentage of B.C. students in Grade 4 and Grade 7 who meet or exceed expectations on the Grade 4 and Grade 7 Reading Foundational Skills Assessment.
Data source	Ministry of Education FSA database.
Coding	Failed to Meet/Met/Exceeded expectations
Method of calculation	All students' scores were scaled and equated. Students' raw scores (i.e., total number of points) were translated to scaled scores. The scales were developed such that they ranged from 200 through 800, with a mean of 500. Scaling converts raw points from one scale to another.
Sample Size	School exams are a census of all students in the reference grade.
Reference Population	All children enrolled in Grade 4 and Grade 7.
Data Availability	Annually.
Comprehensiveness	Based on MoE data in January 2013 enrolment of all Grade 4 students: N=43,033 Grade 7: N=44,486
Treatment of Missing Values	Scores for students for whom performance is undetermined are included in overall percentage distributions and reported as "performance unknown".
Risk Adjustment	unknown
Rationale for Inclusion	The review highlighted evidence that suggests there is greater potential value in focusing interventions on foundational skills that are learned/developed in earlier school years. MoE staff identified the high correlation between meeting and exceeding grade for reading performance and high school graduation
Standards/Benchmarks	February 2011: 69.5% of all Grade 4 students met (57.8%) or exceeded (11.7%) expectations on the reading FSA.
Limitations	The reported percentage of meets/exceeds expectations underestimates performance as there are 6,563 (15.5%) for whom their performance level is unknown.
Comments	More information is available from the Ministry of Education website.

48. Child Numeracy

Definition	Percentage of B.C. students in Grade 4 and Grade 7 who meet or exceed expectations on the Grade 4 and Grade 7 Numeracy Foundational Skills Assessment.
Data source	Ministry of Education FSA database.
Coding	Failed to Meet/Met/Exceeded expectations
Method of calculation	All students' scores were scaled and equated. Students' raw scores (i.e., total number of points) were translated to scaled scores. The scales were developed such that they ranged from 200 through 800, with a mean of 500. Scaling converts raw points from one scale to another.
Sample Size	School exams are a census of all students in the reference grade.
Reference Population	All children enrolled in Grade 4 and Grade 7.
Data Availability	Annually.
Comprehensiveness	Based on MoE data in January 2013 enrolment of all Grade 4 students: N=43,033 Grade 7: N=44,486
Treatment of Missing Values	Scores for students for whom performance is undetermined are included in overall percentage distributions and reported as "performance unknown".
Risk Adjustment	unknown
Rationale for Inclusion	The review highlighted evidence that suggests there is greater potential value in focusing interventions on foundational skills that are learned/developed in earlier school years.
Standards/Benchmarks	
Limitations	The reported percentage of meets/exceeds expectations underestimates performance as there are 6,563 (15.5%) for whom their performance level is unknown.
Comments	More information is available from the Ministry of Education website.

49. Grade 10 Literacy

Definition	Percentage of B.C. students in Grade 10 who pass provincial grade 10 English exams.
Data source	BC Ministry of Education
Coding	Fail/Pass (C-, C, C+, B, A)
Method of calculation	(Total number of students with a passing grade on Grade 10 English exam／total number of who wrote the English 10 exam) * 100
Sample Size	School exams are a census of all students in the reference grade.
Reference Population	All students enrolled in Grade 10 English in either September and/or February of the reference year.
Data Availability	Annually
Comprehensiveness	Covers all students who take the Grade 10 English provincial exams.
Treatment of Missing Values	Missing data are excluded from the calculations.
Risk Adjustment	Data are not adjusted in any way for reporting as the entire population is covered.
Rationale for Inclusion	Evidence suggests that performance in English is a reasonable predictor of high school completion, college attendance and performance, and, therefore future employment and earnings potential. The upstream effects from poor English performance may be more highly associated with poor future health and well-being outcomes. Reporting an exam score versus course grades provides a more standardized rating of student performance, mitigating individual teaching styles that may influence performance over the course of an entire school year.
Standards/Benchmarks	2011/12 School Year: 95% of students who took the provincial Grade 10 English exams passed.
Limitations	Reporting an exam score provides information on one only performance for all students, and could over or under represent performance in Grade 10 English to the degree that students' performance overall is accurately reflected by exam scores.
Comments	More information is available from the Ministry of Education website.

50. Grade 10 Numeracy

Definition	Percentage of B.C. students in Grade 10 who pass provincial grade 10 math exams.
Data source	BC Ministry of Education
Coding	Fail/Pass (C-, C, C+, B, A)
Method of calculation	(Total number of students with failing grade on Grade 10 Math exam for Applications of Math 10, Essentials of Math 10, or Principles of Math10／ total number of students with any grade on these three exams) * 100
Sample Size	School exams are a census of all students in the reference grade.
Reference Population	All Grade 10 students in the School in either September and/or February of the reference year.
Data Availability	Annually
Comprehensiveness	Covers students who take the provincial exams.
Treatment of Missing Values	Missing data are excluded from the calculations.
Risk Adjustment	
Rationale for Inclusion	Evidence suggests that performance in mathematics is a reasonable predictor of high school completion, college attendance and performance, and, therefore future employment and earnings potential. The upstream effects from poor math performance may be more highly associated with poor future health and well-being outcomes. Reporting an exam score versus course grades provides a more standardized rating of student performance, mitigating individual teaching styles that may influence performance over the course of an entire school year.
Standards/Benchmarks	For the 2011–2012 school year, a total of 92% of Grade 10 students who took the provincial math exams passed.
Limitations	Reporting an exam score provides information on one only performance for all students, and could over or under represent performance in Grade 10 Math to the degree that students' performance overall is accurately reflected by exam scores.
Comments	More information is available from the Ministry of Education website.

51. High School Completion Rate

Definition	The six-year completion rate is the portion of students who graduate, with a Certification of Graduation, within six years from the time they enrol in Grade 8.
Data source	Ministry of Education
Coding	High school completed or equivalency attained: Yes/No
Method of calculation	(The number of all people who graduate from high school with a Certificate of Graduation within six years of enrolling in Grade 8／the number of all people who have enrolled in Grade 8 in the reference year) * 100.
Sample Size	This is based on administrative data held by the MoE, therefore no sampling is involved.
Reference Population	All students who enrol in Grade 8 in both public and independent schools in BC
Data Availability	Annually
Comprehensiveness	All individuals with documented high school completion.
Treatment of Missing Values	There are no missing values in administrative data bases.
Risk Adjustment	The rate is adjusted for migration in and out of British Columbia
Rationale for Inclusion	Completion of high school, specifically attaining status of “high school graduate” is a significant predictor of employment status. Therefore, it is important to monitor the proportion of young people who achieve this status, either through “on time” graduation, normally by age 18, or through adult education programmes.
Standards/Benchmarks	In 2009/10, the rate for males was 77%, and for females was 83%.
Limitations	
Comments	

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