Introduction

This chapter provides a summary of the data sources we have utilized in the Atlas, along with the key map outlines that are used to map the geographical variations in wellness indicators and assets. A brief guide on how to analyse the maps, tables, and graphs used in the following chapters is also provided.

In producing the wellness maps, several key data sets and information sources were used. Criteria for including data are as follows:

- Data provide measures related to wellness dimensions and assets for wellness.
- Data have been collected on an ongoing or periodic basis. This allows an opportunity to measure changes and trends over time.
- Data can be analysed on a geographical basis, primarily for the 16 Health Service Delivery Areas (HSDAs) of the province. This ensures that geographical differences can be measured, and patterns detected. For some maps, depending on the data source, School Districts (59), Economic Development Regions (8), or Regional Districts (29) are used (see following pages). In some cases, “custom” maps are presented, based on a single, novel indicator.
- Data are readily available and can be accessed inexpensively. No new data have been specifically collected for the analyses included in the Atlas. Rather, existing data are brought together from a variety of different sources in order to develop the maps. However, some of the data that we use have been modified to add value so that comparisons can be made. For example, raw data are often converted into percentages or rates so that standard comparisons can be made between geographical regions.
- Data have not been mapped and published elsewhere in the way we have developed. Certain indicators, or their derivatives, may have been previously mapped, but in a different manner. This is often related to the wellness approach, or “half-full” approach we have taken, rather than the “half-empty” approach that other health-related atlases often employ. In large part, the maps included in the Atlas are unique, and have been constructed specifically for the purposes of this Atlas. In just a couple of instances this is not the case, as key maps and data are necessary to provide context for the maps that follow.

Some of the key data sources we use are based on survey data. Information collected through surveys is very useful for measuring dimensions and assets related to wellness. As previously noted, wellness is not an easy thing to define, and it can be argued that wellness is subjective and has a value judgment about what it is and what it isn't (Miller & Foster, 2010). Using individuals’ responses to specific questions captures this subjectivity around wellness.

A major challenge that a project of this nature faces is the issue of having current information. It may take a couple of years for data to be checked and verified from survey data, and surveys such as the Canada Census occur only every 5 years. Many of the indicators in this chapter are based on survey data, so may be several years old. However, in most cases they were the latest that were readily available for geographical analyses at the time of writing. Where appropriate, comparisons with the last previous survey are made so that changes can be
assessed.

Several administrative data sets are also included. The following are the key data sources that were used for mapping purposes, and limitations and cautions are noted.

The Canadian Community Health Survey

The Canadian Community Health Survey (CCHS) is undertaken by Statistics Canada, in partnership with Health Canada, on a regular basis across the country. Because CCHS is a national survey, it allows geographical comparisons to be made not only within the province, but also between provinces and with overall Canadian averages (McKee et al., 2009). This data set was used prominently in the original BC Atlas of Wellness, and is again a mainstay of this second edition: approximately 50 indicators and close to 250 maps are derived from this data set. There is a standard set of questions asked of all participants, whose ages range from 12 years and up. Provinces can buy extra modules of questions dealing with a variety of different health- and wellness-related factors. BC, for example, purchased additional modules related to such areas of interest as social and emotional supports, food security, food content, and injuries in the 2007/8 survey (CCHS 4.1), which is the latest full survey data set available for BC at the time of writing.

The CCHS was initially undertaken every second year, and the original Atlas reported wellness indicators based on the 2005 CCHS 3.1 data set. Since then, a change in procedure has taken place so that surveys are undertaken every year, and it is possible to report a half sample on an annual basis. This is certainly very useful for making comparisons year-to-year and for comparisons among provinces, but because the annual sample is only one-half of a full sample as was collected in 2005, the sample size for examining within-province differences is not as useful for our purposes.

The data collection for the full sample for CCHS 4.1, which can be reasonably compared with the 2005 sample, took place over the 24-month period of January 2007 to December 2008 inclusive. Approximately 50% of the respondents were sampled in both years. The total combined sample size (N) was approximately 14,650. Data collection varied throughout the months of the year, with over 1,800 being sampled in March and May of both years, and less than 700 sampled in each of June and December of both years. Accordingly, some caution is required in interpreting the results of the maps and supporting tables, especially for those questions that might be related to seasonal activities. Further, over that time period, there were major changes in the economy which may have affected some of the responses occurring late in 2008.

As noted above, respondents are limited to those 12 years of age and older and, as the title suggests, the survey collects information from respondents living in the general community. Therefore data are limited, in that individuals living in institutions (e.g., care or health institutions, jails) or living on Indian reserves or Crown lands, full-time members of the Canadian Armed Forces, and residents of very remote regions are not included. Some of these groups, particularly Aboriginal peoples, are known to have, on average, generally poorer health and wellness status than the remainder of the population (Kendall, 2009); those in care facilities are often there because of poor health or disability factors, and those in correctional facilities also have much poorer health status than the general population (Møller et al., 2007). As a consequence, the data presented from the survey may be biased toward more positive values of wellness, although approximately 98% of the Canadian population aged 12 and older are covered. However, given the relatively large numbers of remote communities, particularly Indian reserves, in the province, it is likely that the coverage for BC may be lower than the national average.

As with any survey data, although best attempts are made to ensure clarity of questions, honesty of responses, and randomness in the selection of respondents, these criteria may not always be fully met, and caution should always be practiced when studying the data and making conclusions based on the resulting analyses.

The Share File data set has been used for our analysis. Only responses from those individuals who agreed to share their data with Statistics Canada's partners (e.g., provincial/territorial health departments) are included in the Share File. Reporting of the data follows the guidelines suggested by Statistics Canada (Statistics Canada, 2009).

Indicators from samples of less than 10 individuals, or those with a coefficient of variation greater than 33.33% are not reported in this analysis, while those with a coefficient of variation between 16.67% and 33.33% are noted because of potential instability in results. This instability is usually related to smaller sample sizes.

Selected characteristics of the BC CCHS 4.1 respondents were as follows:

- Nearly 97% of interviews were conducted in English, 2% were conducted in Chinese languages, and 1% in other languages.
- 52% were married or living common law, 27% were...
single or never married, and 21% were widowed, divorced, or separated.

- 54% were females.
- Median annual family income was just under $60,000.
- 74% were born in Canada, 11% in Europe, 10% in Asia, and 5% elsewhere.
- Approximately 5% self-identified as Aboriginal.
- Approximately 60% of the total sample had paid work, and for those between the ages of 15 and 74 years, more than 74% of men and over 59% of women respondents were in the paid work force.
- Over 19% had at least a bachelor degree.

For BC, survey data are available at the HSDA level, and numerous indicators based on the survey are mapped in this Atlas. In most cases, indicators are mapped using the five map model introduced in the first edition of the BC Atlas of Wellness, and most are based on the following demographic cohorts:

- Respondents age 12 years and over
- Male respondents age 12 years and over
- Female respondents age 12 years and over
- Respondents age 12 to 19 years
- Respondents age 65 years and over

Data are also provided for the age group 20 to 64 years (mid-age cohort), but maps are not provided because in most, but not all, instances, patterns and results are very similar to the age 12 years and over group. In some instances, different age groups are used as the standard age groups are not appropriate. This occurs primarily for indicators related to questions concerning working, or being free of chronic conditions. For example, all indicators related to working and work settings use the following age groups: 15 to 75 years; 15 to 24 years; 25 to 44 years; 45 to 75 years. These groups better reflect the working age population. The free of chronic disease indicators in Chapter 11 have the following age cohorts: 12 years and over; 35 to 49 years; 50 to 64 years; and 65 years and over. These reflect the fact that most chronic diseases are age-related.

Another difference involves the stress-related indicator in Chapter 12, which uses the age cohort 15 years and over, rather than 12 years and over, to reflect the fact that the question was only asked of respondents aged 15 years and older. Finally, the Body Mass Index (BMI) indicator uses these age groups: 18 years and over; 20 to 34 years; 35 to 64 years; and 65 years and over. A different BMI calculation was used for the under 18 age group, and we were not confident that comparisons with the younger age group would be entirely valid. A separate set of maps has been developed for the younger age cohort, and this allows us to give gender comparisons.

The values of the indicators are given as percentages (%) of respondents answering a question in a manner that is positive from a wellness perspective (e.g., percent non-smoker, rather than percent smoker is used). Provincial values from the 2005 CCHS 3.1 sample are compared for the majority of the variables so that changes between 2005 and 2007/8 can be observed – have things become better, or worse – and a graph is provided that allows comparisons between the BC and Canadian samples for the 2007/8 CCHS data set, so that differences between BC and Canada can be analysed – is BC doing better or worse than Canada as a whole. In some cases, not all provinces/territories participated in certain modules of the CCHS, and so “Canada” values are only the average of those who did participate. Therefore, caution in making comparisons is necessary in these cases. Cautions are noted in the text where this occurs.

A brief discussion of sample size, confidence intervals, and significance levels is important so that users can understand the meaning of the term “significant” when used with sample survey data in the Atlas. Sample survey data only give an estimate of the actual value, and so it is useful to provide confidence intervals for each value. The intervals provide the range that the actual value of the population will fall within, and we have used a confidence interval of 95%. What this means is that, if the survey was repeated, the point value would occur within this interval 95 times out of 100. For example, if the point estimate of an indicator is 80%, and the standard error of the estimate yields a 3% error either side of 80%, then the point value estimated by repeated sampling of the population will be in the interval from 77% to 83%, 95 times out of 100. If a larger sample is collected, the confidence interval will be narrower, giving a clearer picture of the true value of the response. For example, if the sample size is doubled, the confidence interval either side of the estimated value may shrink to say 2%, so that the estimate of the value will fall within 2% either side of 80%, that is, 78% to 82%. As the sample size increases, the confidence interval gets narrower, giving a closer approximation of the true value.

For our purposes, confidence intervals have been calculated using the “bootstrap” methodology provided by Statistics Canada. To determine if two sample estimates are significantly different, their confidence intervals are
compared. If one sample (A) has a value of 80% with a confidence interval of 6%, its real value lies within the range of 77% to 83%, or 3 percentage points either side of 80%. If another sample (B) has a value of 76% and a confidence interval of 4%, the real value falls within the range of 74% to 78%. Because the lowest value (77%) of sample A is less than the highest value (78%) of sample B, we cannot say that the two values are statistically significantly different from one another. If a third sample (C) has a value of 88% with a confidence interval of 8%, then its true value falls within the range of 84% to 92%. Because the lowest value of sample C (84%) is higher than the highest confidence interval values of both samples A and B, then we can say with 95% confidence that sample C is statistically significantly different (higher) than both samples A and B. Use of the term “significantly different” in the Atlas means there is a statistically significant difference between two values.

McCreary Centre Society Adolescent Health Survey (AHS)

Over the past decade or so, the McCreary Centre Society (MCS), a non-profit agency in Vancouver, BC, focused on youth health and behaviour, has undertaken four major surveys of students in grades 7 to 12 in BC. The most recent survey (AHS IV), which included over 29,315 BC public school students in 1,760 classrooms across 50 of BC’s 59 school districts, was completed between February and June 2008. It was the largest survey of its kind in Canada, and provided a comprehensive picture of the physical and emotional health of BC youth, including risk and protective factors. There were nearly 150 questions in the survey instrument, which was administered in randomly selected classes throughout most school districts. Participation was voluntary, and parental consent procedures were determined at the school district level.

Selected characteristics of the AHS IV respondents are as follows (note, not all students identified their grade level):

- 48.5% were males and 51.5% were females
- 19% were in grade 7 (5,496 students)
- 17% were in grade 8 (4,890 students)
- 18% were in grade 9 (5,195 students)
- 16% were in grade 10 (4,743 students)
- 16% were in grade 11 (4,805 students)
- 14% were in grade 12 (4,114 students)

Public health nurses, nursing students, and other trained personnel administered the confidential and anonymous survey in English. This may have affected those youth who were new immigrants and/or those who did not have the language or literacy skills to complete the questionnaire, so some caution in interpreting results is needed. While this is a very rich and robust data set, not all school districts in the province elected to be included in the survey, leaving several areas of the province without data. Data, while collected at the school level, were sampled and weighted by Statistics Canada based on the characteristics of the school population in each HSDA, so that the samples were representative of all BC youth in grades 7 to 12. For 2008, data gaps occurred for Northeast, and data for Fraser South and Fraser East were combined and weighted accordingly. More information about the MCS survey, along with numerous reports based on their surveys, can be found on the McCreary Centre Society website (McCreary Centre Society, 2010). As with the CCHS indicators, those from AHS IV have 95% confidence intervals, calculated by staff at MCS, so that significant differences could be noted.

School District Data

There is a variety of data related to wellness indicators available from school districts, including survey and administrative data. For several years, the BC Ministry of Education has undertaken annual satisfaction surveys of students in selected grades, canvassing various issues, including: achievement, human and social development, safety, preparation for the future, school environment, and health. The survey also canvasses parents and teachers and is known as the School Satisfaction Survey. We only use the Students Satisfaction Survey results in the Atlas. The survey is delivered online, takes about 10 minutes to complete, and is available 24/7 from January to mid-April. These data are readily available at the school district level (Ministry of Education, 2010c). Some key characteristics of the student respondents in 2008/9 are as follows:

- 90% of grade 3/4 participated (33,968 students)
- 88% of grade 7 participated (36,539 students)
- 72% of grade 10 participated (33,489 students)
- 59% of grade 12 participated (26,031 students)
- 49% were females and 51% were males

A number of indicators have been mapped at this geographic level, including physical activity, nutrition, learning how to stay healthy, learning about art and music, school safety, bullying, and smoke-free behaviours.

Although a survey instrument was used only for grades 3/4, 7, 10, and 12, all students in those grades were
surveyed, eliminating the need for developing confidence intervals, as was necessary for the CCHS and McCreary AHS data. Given the young age of some of the respondents, and the fact that the response rate drops off as grade increases, caution should be exercised when interpreting results.

Educational achievement data are also available. Key indicators include Foundation Skills Assessments for Grades 4 and 7 in reading, writing, and numeracy. There has been controversy about the use of these assessments, and not all students participate. Approximately 17 to 18% of potential respondents did not participate in the 2009/10 school year, so some caution in interpreting the results is necessary.

The Human Early Learning Partnership (HELP) at the University of British Columbia continues to collect “readiness to learn” data on entry level kindergarten students throughout the province of BC using the Early Development Instrument (EDI). Only a limited number of maps are included in this Atlas, as others are available elsewhere (HELP, 2010).

### 2006 Canada Population Census

The Government of Canada undertakes a general census of the total population and its characteristics every 5 years. The 2011 census data will not be available for some time, and so the 2006 census data were used in the Atlas as they represent the latest available. Key assets of wellness and determinants of health are available from this data source, and several are mapped to provide a sense of the “assets” or “positives” available at the population level to support wellness. The data for our purposes were publicly available through BC Stats, which has been an important partner in working with us and providing advice on this Atlas. One caution with respect to census data is that several of the population characteristics depend on self-identification, such as “Aboriginal heritage.” This may be underestimated as a result.

The format for the 2011 census has been changed, so that a majority of questions have become voluntary rather than mandatory, as was previously the case. Only a limited number of questions will be mandatory, and these are related to numbers living in a household, names, age, sex, language, and marital status. The so-called “long form” census, which is given to 20% of households, provides a lot of key socioeconomic data, much of which is related to wellness assets. This component of the census is now voluntary, and will be collected as part of the National Household Survey. This change was introduced by the Federal Government because of stated privacy concerns. While this does not affect the quality of data in the current edition of this Atlas, it may be compromised for any future editions. Questions to be included in the voluntary survey include a variety of factors such as activity limitations, citizenship and immigration, ethnic origin, religion, mobility, place of birth of parents, education, labour market activities, place of work, work activity, child care and support payments, income, and housing (Statistics Canada, 2011a). For the 2006 census, these questions were mandatory for 20% of households.

### 2006 Canada Agricultural Census

This is a new data source introduced to this edition of the Atlas to reflect an increased interest in wellness related to nutrition and food security. The agricultural census runs concurrently with the population census. The agricultural census uses the word “operator” to define a person responsible for the management and/or financial decisions made in the production of agricultural commodities, and an agricultural operation is defined as a farm, ranch, or other operation that produces agricultural products intended for sale, and includes small operations sometimes known as “hobby farms.” The census collects data such as number of farms and farm operators, farm areas, business operating arrangements, land management practices, livestock, and crop inventories (Statistics Canada, 2011b). For the purposes of this Atlas, we map a variety of food- and nutrition-related indicators at the Regional District administrative level, such as organic farming, greenhouse production, and main farming types.

### BC Vital Statistics

The BC Vital Statistics Agency collects a variety of data on births, deaths, and marriages. Important wellness data on maternal conditions, perinatal conditions, and outcomes for newborns and infants (first year of life) are collected through the Notice of Birth (NOB) registration. A healthy beginning for a child is related to healthy development through to adulthood. Important vital statistics data used in this Atlas include, among others, age of mother giving birth, birth weight, and length of pregnancy before delivery—all key wellness factors for newborns. Some caution is required with the use of the NOB data, as they rely on individual birthing professionals to complete all of the required components of the form, and data were not always complete. Also, the data presented in the Atlas only cover events that occurred in the province. Events occurring to BC residents elsewhere are not included, and this is potentially problematical for the northeast and southeast of the province, where difficult or risky births
may occur in the neighbouring province of Alberta. Again, caution is required when analysing the maps.

**2010 Legacies Now**

2010 Legacies Now, as noted in Chapter 1, is an independent entity that recently changed its name to LIFT Philanthropy Partners with a mandate to “accelerate the growth and impact of selected not-for-profit organizations to create positive and lasting social change through sport and healthy living, and literacy and lifelong learning”.

Over the past few years, 2010 Legacies Now has received data from Sports BC, a non-profit agency that represents more than 80 sports organizations, including over 60 designated provincial sports organizations. Membership registration has been collected for numerous sports and games activities. Key rates of sport club membership, as measured by registration in different sports activities, have been used in the Atlas based on the data provided through 2010 Legacies Now. There is a new system in place that can provide the data at the HSDA level. In the first edition of the Atlas, data were only available at the Economic Development Region level. These data do not include sports activities undertaken through schools and, as such, participation rates are likely an underestimate of actual sports participation in the province.

**BC Healthy Living Alliance**

As part of the ActNow BC initiative, BC Healthy Living Alliance (BCHLA) introduced a series of initiatives to support smoke-free living, healthy nutrition, physical activity, and community capacity building. Based on these program initiatives, we have been able to develop a series of custom maps by working in partnership with BCHLA to show the geography and reach of the various programming initiatives.

**Other Data Sources**

There is a variety of other data sources used to map different indicators. These include, among others, agricultural land reserve, public library statistics, climatic features related to agriculture, housing data, and a variety of custom maps based on key website available data related to wellness factors and ActNow BC.

**Geographical Units Used for Mapping**

Throughout the Atlas, there are several different administrative geographical units that we use for mapping purposes. The most common one is the Health Service Delivery Area (HSDA) unit. While there are five geographical Health Authorities in the province, each is made up of separate HSDAs that number 16 in total. This administrative unit has been chosen as the base geographical unit for the Atlas primarily because it is the most detailed geographical breakdown we could get for the key data source that we use, the CCHS. Using a common mapping unit enables an examination of the values of different indicators for any HSDA, thus allowing the ability to build an overall wellness picture of that HSDA based on numerous indicators.

The school district administrative unit, of which there are 59 geographical units in the province (an additional school district, Ecole Scolaire Francophone, is not geographically based, but is generally included in the total values for the provincial school population), is the next most common geographical administrative unit used. The Regional District, of which there are 29, is a new administrative unit used in this Atlas. Finally, we also use the Economic Development region unit for one key series of indicators related to lifelong learning.

Finally, a number of what we call “custom maps” have been produced. These have only the outline of the province as the geographical unit used. These maps tend to show specific locations within BC (e.g., Farmers Markets), or isolines of a particular feature (e.g., Growing Degree Days).

Maps are related to one or more of the following: wellness determinants and assets, smoke-free environments, nutrition and food security, physical activity, healthy weights, and healthy pregnancy and birth. These are the key components of the original ActNow BC initiative. In addition, indicators related to being free of chronic conditions, and overall wellness outcomes, are included.

**Interpreting the Maps, Tables, and Graphs**

Most data are divided into quintiles for mapping purposes. A quintile represents one-fifth or 20% of the administrative units being mapped for any particular indicator. Different colours differentiate the quintile groupings. Most range from GREEN for those geographical units with indicator wellness values in the highest or best quintile (or top 20%) through colour gradations to RED for the lowest quintile (or bottom 20%) value areas. For indicators that are neutral, in the sense that a high or low value does not denote better or poorer wellness, neutral colours are used, such as shades of BLUE, and quintiles are still used for these indicators for mapping purposes.
Cautions and Caveats in Map Interpretation

When using maps to view information and data, the user should be aware of a couple of major cautions, especially for many of the maps presented in this Atlas. While we are able to show variations in indicator values between different HSDAs, or school districts, we do not show variations within HSDAs. In some instances, such as Vancouver, with a high population density, and large variations in many socioeconomic characteristics, the variations in the indicator values within the HSDA may be greater than those between Vancouver and all other HSDAs.

The population in BC is very much concentrated in the southwest of the province and southern part of Vancouver Island. Much of the interior, north, and southeast of the province is sparsely populated, but contains large tracts of land mass (see Chapter 4).

Users must be cautioned against coming to a conclusion that much of the province has high or low values related to a certain indicator. While technically that may be correct from the perspective of land mass covered, it would not be correct to say those values occur to most of the population in the province.

The following four pages provide base maps for HSDAs, School Districts, Regional Districts, and Economic Development Regions, along with the names of the individual administrative units. They are followed by a brief guide on how to interpret and analyse the maps and tables used in the Atlas.

The CCHS sample data provide an example of the most frequent map page format, along with a supporting table. Only the CCHS map model is described here, but the majority of other maps are of a similar nature for presentation and analysis purposes. For CCHS data only, a graph is also presented so that comparisons can be made between BC and Canada for specific cohorts.

Two pages are devoted to each indicator so that the user can read and see at a glance a summary of what is happening geographically within the province for that indicator, as well as how provincial values compare with Canadian values. Comparisons can be made as follows, and in each case statistically significant differences are noted:

- Differences between sexes at the provincial level and at the individual HSDA level can be noted.
- Provincial values for 2005 and 2007/8 can be compared to show differences over time.
- Provincial results can be compared with Canadian results for each age cohort and by sex for the 2007/8 sample data, to show differences.
- Geographical patterns can be viewed within BC.

The maps on the page 29 plot sample data to illustrate the presentation methodology used throughout the Atlas. The values in percent (%) for HSDA respondents who answered the question in a positive way from a wellness perspective are listed in the table opposite the maps. The algorithm that was used places each of the highest and lowest three HSDAs in the best and worst category respectively, while the next best and next worst three HSDAs are set in the second and fourth groups respectively, with the remaining four placed in the middle group. The algorithm is designed to highlight the highest (best) and lowest (worst) performing HSDAs. Where two or more units share the same score and fall into overlapping groups, they are placed in the least extreme category of the overlap (i.e., the bias is toward the middle group rather than to the extremes). The colour index at the side of the maps provides the range of values of the five (quintile) groups used for mapping.
Health Service Delivery Areas

11 East Kootenay
12 Kootenay Boundary
13 Okanagan
14 Thompson Cariboo Shuswap
21 Fraser East
22 Fraser North
23 Fraser South
31 Richmond
32 Vancouver
33 North Shore/Coast Garibaldi
41 South Vancouver Island
42 Central Vancouver Island
43 North Vancouver Island
51 Northwest
52 Northern Interior
53 Northeast

Source: BC Statistics
School Districts

5 Southeast Kootenay
6 Rocky Mountain
8 Kootenay Lake
10 Arrow Lakes
19 Revelstoke
20 Kootenay-Columbia
22 Vernon
23 Central Okanagan
27 Cariboo-Chilcotin
28 Quesnel
33 Chilliwack
34 Abbotsford
35 Langley
36 Surrey
37 Delta
38 Richmond
39 Vancouver
40 New Westminster
41 Burnaby
42 Maple Ridge-Pitt Meadows

Source: BC Statistics

Data, Information and Map Interpretation
Regional Districts

1 East Kootenay
3 Central Kootenay
5 Kootenay Boundary
7 Okanagan-Similkameen
9 Fraser Valley
15 Greater Vancouver
17 Capital
19 Cowichan Valley
21 Nanaimo
23 Alberni-Clayoquot
25 Comox Valley
26 Strathcona
27 Powell River
29 Sunshine Coast
31 Squamish-Lillooet
33 Thompson-Nicola
35 Central Okanagan
37 North Okanagan
39 Columbia-Shuswap
41 Cariboo
43 Mount Waddington
45 Central Coast
47 Skeena-Queen Charlotte
49 Kitimat-Stikine
51 Bulkley-Nechako
53 Fraser-Fort George
55 Peace River
57 Stikine
59 Northern Rockies
Economic Development Regions

1  Vancouver Island/Coast
2  Mainland/Southwest
3  Thompson Okanagan
4  Kootenay
5  Cariboo
6  North Coast
7  Nechako
8  Northeast

Source: BC Statistics
The larger top map opposite shows data for the 12 years and over age cohort. The **DARK GREEN** group has a range of 90.99% - 91.91%, and includes the three HSDAs (Northwest, Northern Interior and Central Vancouver Island) with the highest values; the next highest group, in **LIGHT GREEN**, has a range of 89.19% - 90.57%, and includes the three HSDAs with the next highest values; the middle group contains the four HSDAs with the middle values which are coloured **BEIGE**; the next three HSDAs are coloured **ORANGE** and have lower values than the middle group; and finally, the three with the lowest values are **RED** and have a range of 80.02% - 83.80%. When HSDAs are **GREY**, data are not available for mapping, usually because the sample size is considered too small (<10) to report for that region. This is based on the Statistics Canada convention for CCHS data. **CROSS**HATCHED areas have values that are significantly different from the provincial average (see Northwest and Northern Interior, All respondents ages 12+ column above). The four smaller maps focus on different cohorts of respondents: all males, all females, age 12 to 19 years (youth), and age 65 years and over (seniors). **CROSS HATCHING** again denotes any areas that have statistically significantly higher or lower values than the BC average.

The table above supports the maps opposite. Using the same colour scheme and hatching symbols as the maps, the left hand column shows the values of the HSDAs from highest (best) to lowest (worst) for the 12+ age cohort. The other columns keep the order of the left hand column and provide the point estimate for each HSDA for males and females and for the other age cohorts. The two bottom rows show results for BC for 2007/8 and 2005 respectively. A cross hatching symbol indicates there is a significant difference between the two results (e.g., Females 12+ column above).

F (e.g., Kootenay Boundary Ages 12 to 19) indicates the sample size was <10 or the coefficient of variation (CV) was greater than 33.3.

E following a value (e.g., 95.73E for Northwest Ages 12 to 19) indicates a coefficient of variation (16.67 ≤ CV ≤ 33.3) that yields a large confidence interval, rendering a caution in interpretation.

The * symbol indicates a significant difference between sexes within an HSDA, or at the provincial level (e.g., Males 12+ column above).

The † symbol indicates a significant difference between the youth cohort and the 20-64 age cohort within a particular HSDA, or at the provincial level.

The ‡ symbol similarly indicates a significant difference between the seniors cohort and the 20 to 64 age cohort.

The graph above provides the 95% confidence interval ranges (I) for key cohorts for BC and Canada so that comparisons can be made between the two jurisdictions, and between different age cohorts and between sexes.
Canadian Community Health Survey, sample data

All respondents (%)
- 90.58 - 91.91
- 89.15 - 90.57
- 87.53 - 89.14
- 83.81 - 87.52
- 80.02 - 83.80

Males 12+ (%)
- 87.00 - 90.06
- 86.06 - 86.99
- 83.41 - 86.05
- 78.20 - 83.40
- 75.81 - 78.19

Females 12+ (%)
- 92.59 - 95.42
- 91.97 - 92.58
- 91.30 - 91.96
- 88.40 - 91.29
- 81.91 - 88.39

Ages 12-19 (%)
- 92.89 - 95.73
- 90.86 - 92.88
- 86.95 - 90.85
- 85.43 - 86.94
- 79.41 - 85.42

Ages 65+ (%)
- 97.42 - 98.27
- 96.42 - 97.41
- 95.14 - 96.41
- 94.48 - 95.13
- 90.57 - 94.47

Data are suppressed in grey shaded areas due to StatsCan guidelines.
Cross hatched areas are significantly different than provincial average.