

## 4220 Cowichan Valley West

Community Health Service Areas (CHSAs) in British Columbia (B.C.) are administrative bounds nested within Local Health Areas (LHAs) as defined by the B.C. Ministry of Health. This CHSA health profile contains information about the community's demographics, socio-economic and health/disease status as represented through various community health indicators. Unless otherwise stated, data presented in this profile are specific to Cowichan Valley West CHSA.

The purpose of CHSA health profiles is to help B.C.'s healthcare partners, public health professionals and community organizations better understand the health needs of a specific community and to provide evidence for service provisioning and prevention strategies. In general, CHSA-level values of health indicators should be interpreted with the population size of the CHSA in mind as smaller populations can have wide variations in data. For example, some rates presented in the profiles or the database are derived based on a small number of people with potentially high risk of re-identification. To protect the privacy and confidentiality of the individuals, these values are not releasable publicly as per the BCCDC policy and are indicated as such.

Cowichan Valley West (CHSA 4220) is 2,380 km<sup>2</sup> in size and is located on the west coast of southern Vancouver Island. It is comprised of Lake Cowichan, Youbou, Honeymoon Bay, and the following First Nations communities: Ditidaht and Lake Cowichan. Geographical features include Lake Cowichan and Seymour Range. Provincial parks include the following: Carmanah Walbran, Cowichan River, and Gordon Bay. For further information, please refer to [BC Data Catalogue](#).

4220 Cowichan Valley West



Provided by Health Sector Information, Analysis, and Reporting Division, B.C. Ministry of Health

<b>Health Authority:</b>	4 Vancouver Island
<b>Health Service Delivery Area:</b>	42 Central Vancouver Island
<b>Local Health Area:</b>	422 Cowichan Valley West
<b>Community Health Service Area (v.2018):</b>	4220 Cowichan Valley West
<b>Primary Care Network community:</b>	N/A

Please note that CHSA-level data presented in this profile refer to CHSA boundary version 2018. CHSA boundaries may be subject to change because they use Census building blocks.

## Demographics

People in communities use infrastructure, supports, and services differently depending on their demographics such as age, sex, and other characteristics.<sup>[1]</sup> For example, older adults and young families benefit from well-maintained sidewalks and rest areas more than other age groups.

### Total population

Census of population, Statistics Canada, 2016

**6,240**

### Proportion female

Census of population, Statistics Canada, 2016

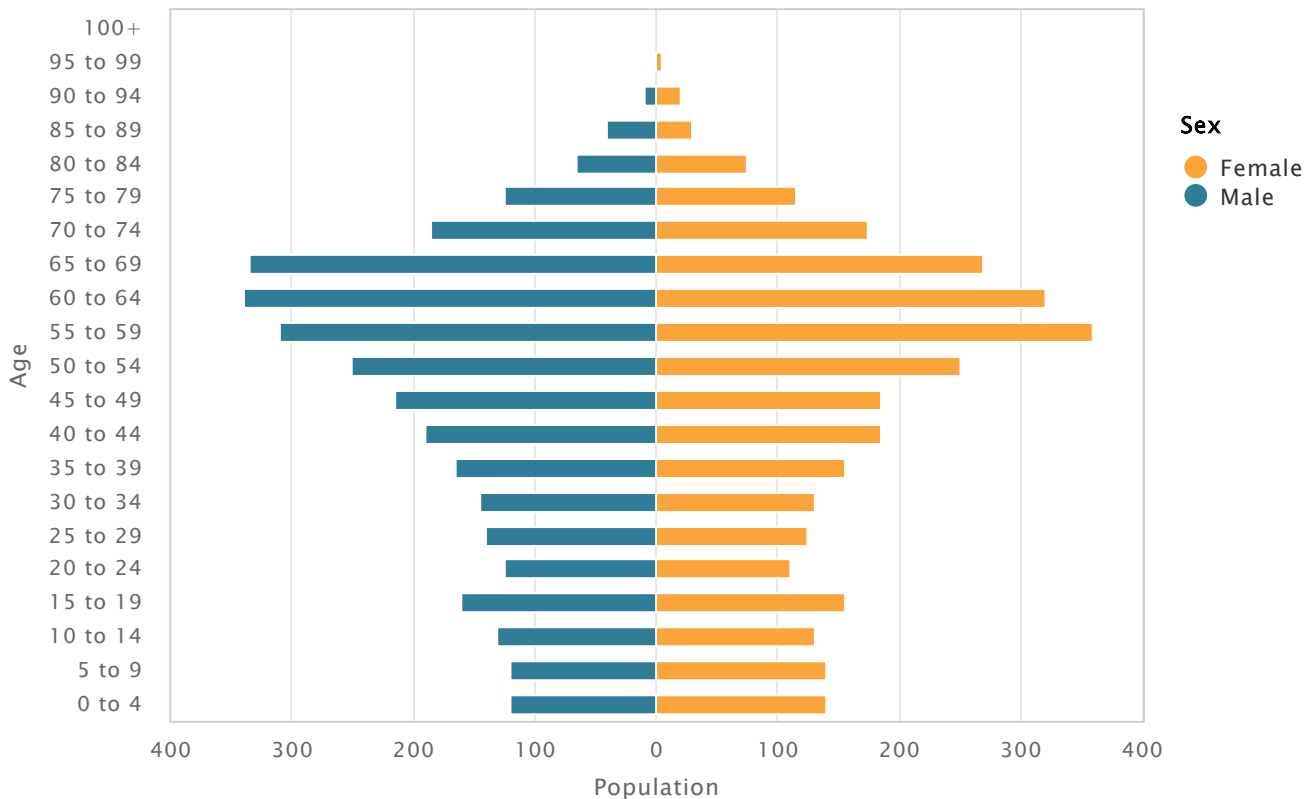
**49.3%**

### Median age

Census of population, Statistics Canada, 2016

**52**

Population age distribution in Cowichan Valley West  
Census of population, Statistics Canada, 2016



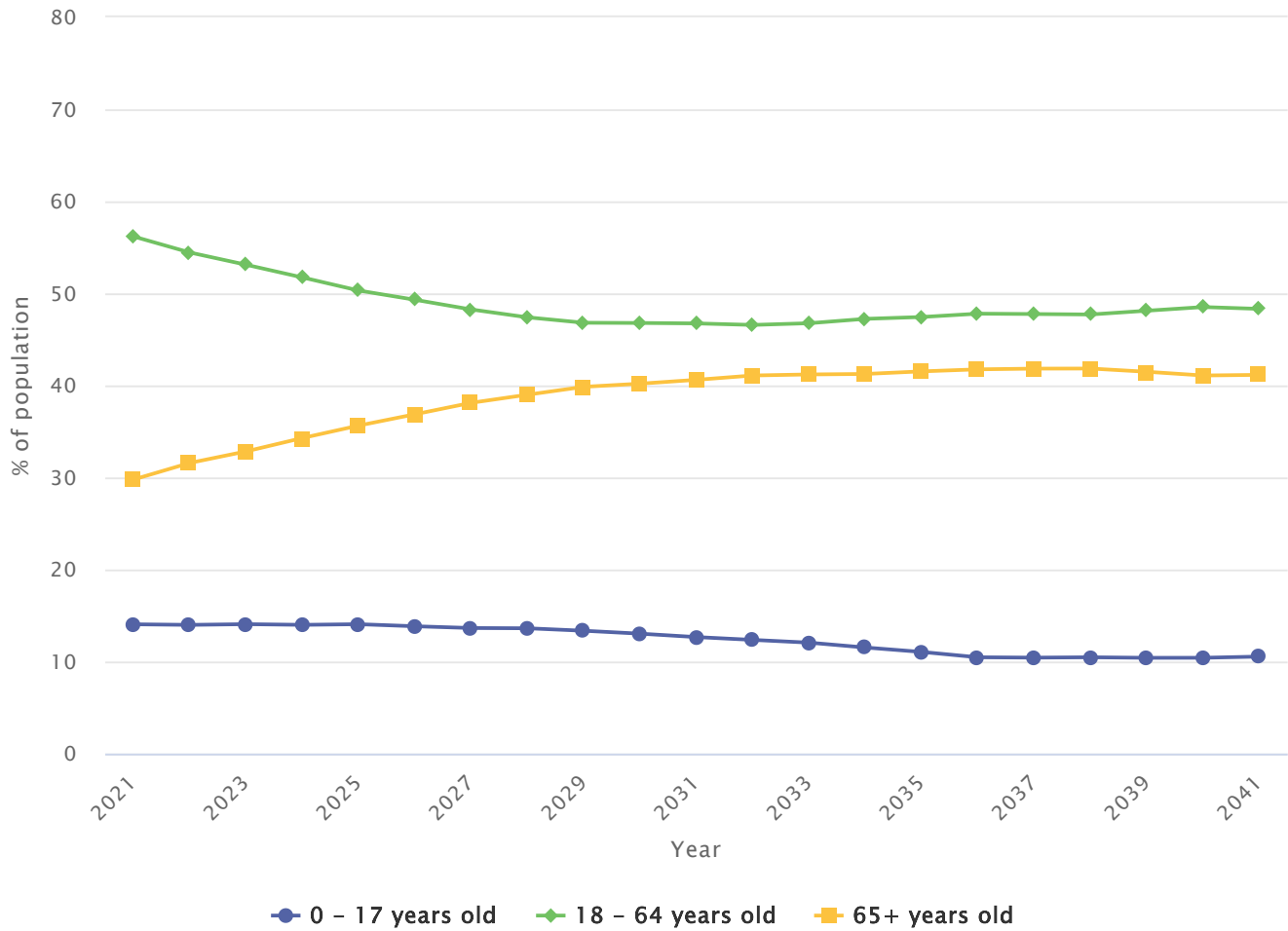
## Population Projection

The needs of a community can change with the size and age of its population. Population projections can help planners meet the changing needs of that community.

### Current and projected population proportions by age group in Cowichan Valley West

#### CHSA

Data source: BC Stats. (2021). Population Projections, Years 2021 – 2041.



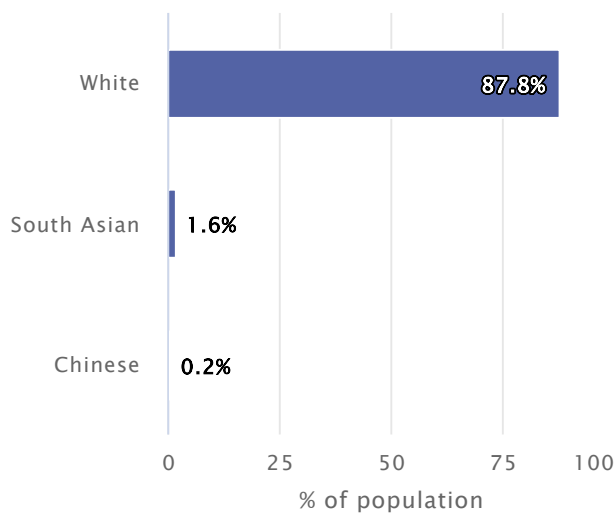
## Diversity

A diverse community is a vibrant community. Different population groups often have different opportunities and challenges in maintaining or improving their health. For example, Indigenous people and new immigrants often have more systemic barriers to accessing health services and sustaining health and wellness.

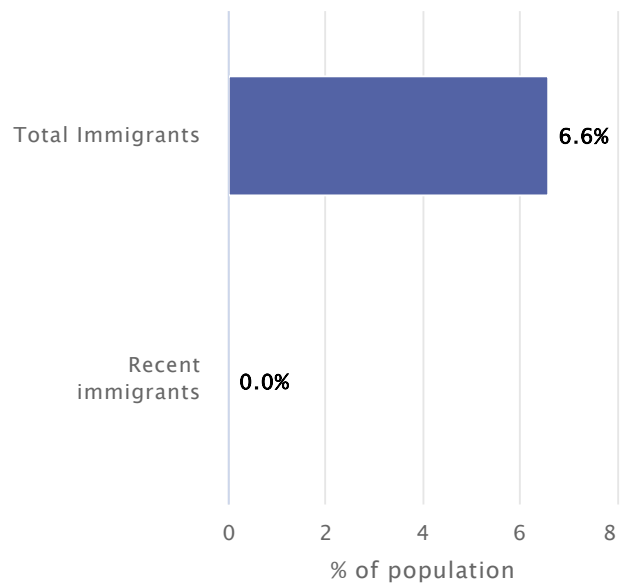
People from diverse cultural and language-speaking groups have unique health needs. These needs must be understood to improve overall health in the community.

Top three ethnicities with highest proportions in the population (other than Indigenous)

Census of population, Statistics Canada, 2016



Immigrant Population  
Census of population, Statistics Canada, 2016



Due to rounding, these may not add up to exactly 100%

### Percentage of population with Aboriginal identity

Census of population, Statistics Canada, 2016

**9.7%**

### Percentage of the population who speak neither English nor French

Census of population, Statistics Canada, 2016

**0.1%**

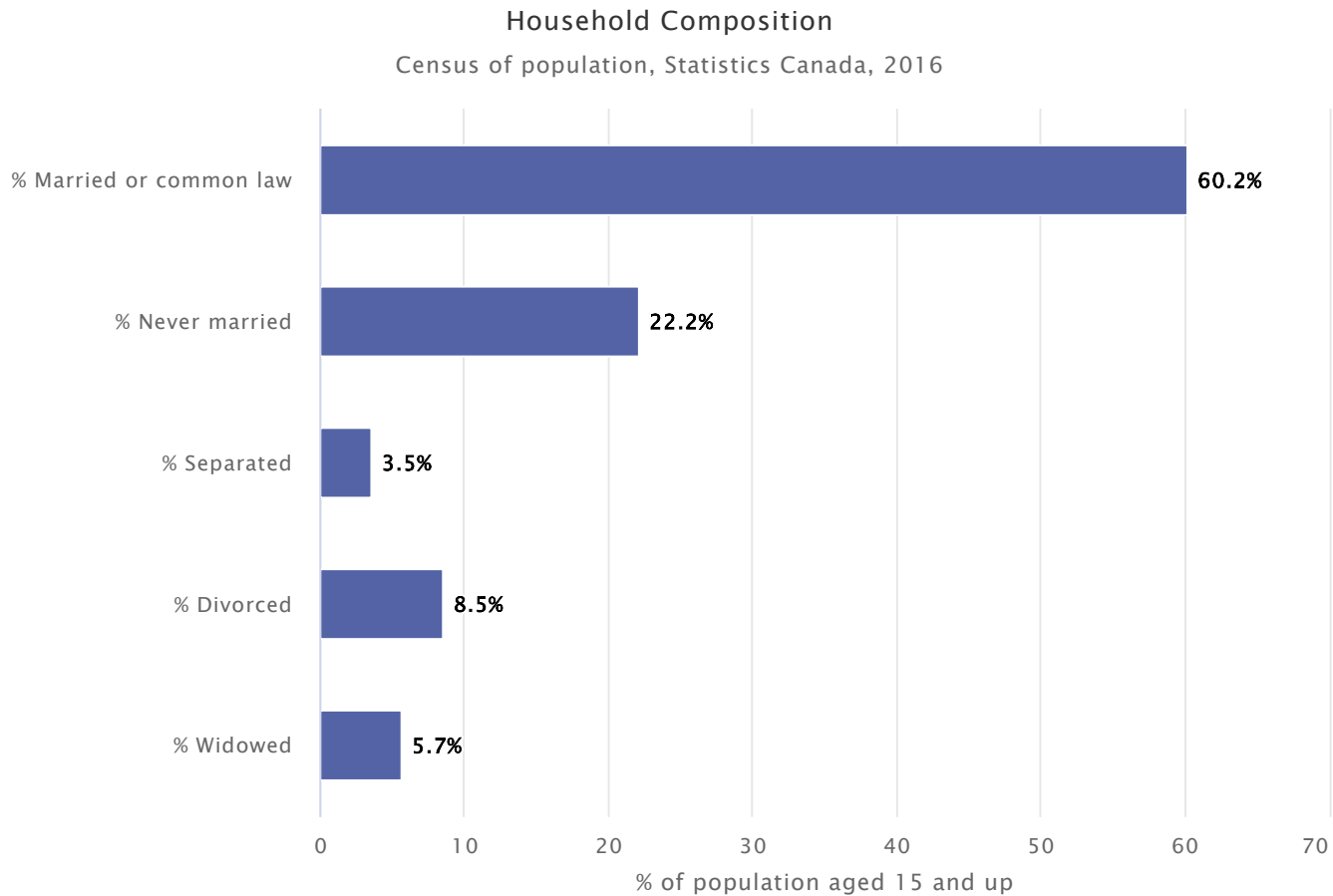
### Percentage of immigrant population who arrived as refugees between 1980 to 2016

Census of population, Statistics Canada, 2016

**8.3%**

## Household Composition

Household composition describes a person or a group of people who live in the same residence. Health and well-being are affected by household composition, including factors such as marital status, single-parent households, and average household size.<sup>[2,3]</sup>



Due to rounding, these may not add up to exactly 100%



**15.4%**

Percentage of the population who are lone parents



**2.2 people**

Average household size

Data source: Census of population, Statistics Canada, 2016

## Housing

Housing refers to an individual's living space and can include private residences, collective dwellings, and shelters. A community's housing profile can provide insight into the health status and needs of that community. For instance, spending 30% or more of a household's income on housing is often considered "unaffordable".<sup>[4]</sup> Households spending 30% or more of their income on housing have less money remaining for healthy foods and other basic living costs. Housing costs may include rent or mortgage payments, bills, property tax, or other maintenance fees.<sup>[5]</sup>

Inadequate or poor housing, such as houses that require major repairs or restoration, may not provide a safe and functional living space.<sup>[5,6]</sup> In addition, unaffordable or inadequate housing can have a negative impact on physical, mental, developmental, and social health.<sup>[6]</sup> Individuals may not have the necessary income or resources to repair their dwelling, which could add more situational stress and may lead to poorer health.



**2,850**

Number of dwellings



**85.8%**

Percentage of dwellings that are single detached houses



**25.8%**

Percentage of the population who rent their dwelling



**10.5%**

Percentage of the population whose dwelling is in need of major repairs



**27.8%**

Percentage of households with 30% or more of income spent on shelter

Data source: Census of population, Statistics Canada, 2016

## Factors that affect health

The following section describes some factors that influence the health and well-being of communities. These factors act alone or in combination and impact the health of communities.

### Income

Income has a substantial impact on health by affecting stress levels and other social determinants of health, such as education, living conditions (e.g., adequate housing and transportation options), and access to healthy choices (e.g., healthy food options and recreational activities).<sup>[7]</sup>

Those with the lowest levels of income are more likely to experience the poorest health, and health appears to improve with increasing income.<sup>[7]</sup> This means that all segments of the population experience the effect of income on health, not just people living in poverty.

### Gross median household income in 2015

Census of population, Statistics Canada, 2016

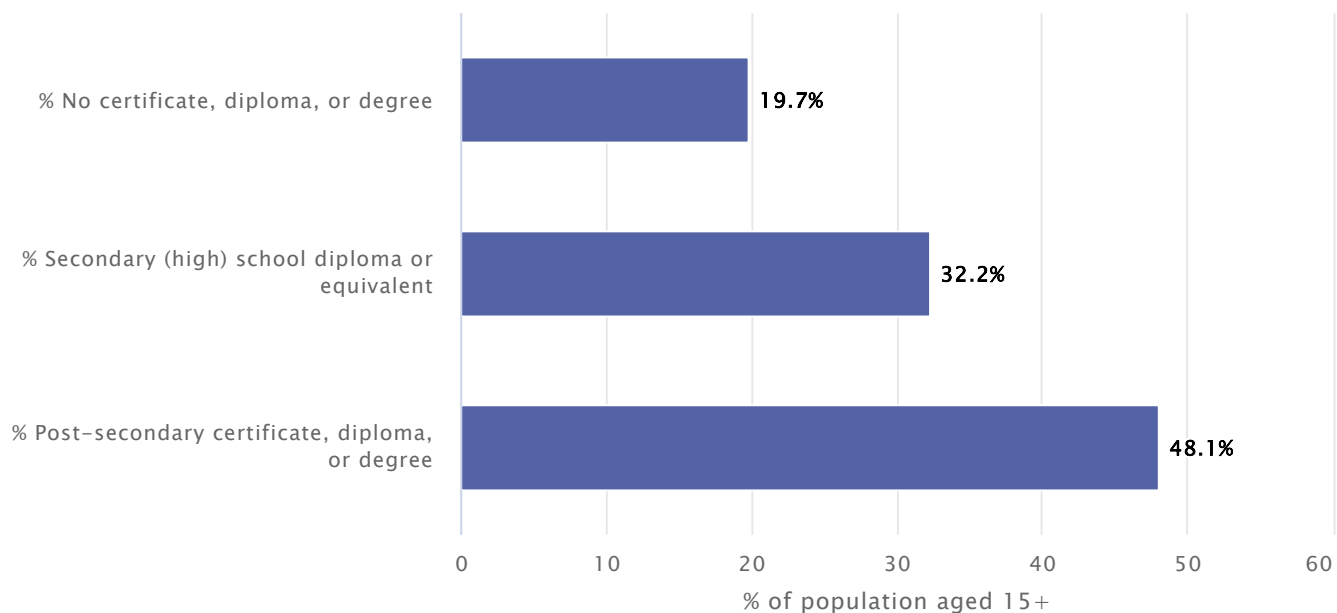
**\$53,443**

### Education

Access to education has an impact on job opportunities, working conditions, and income level. In addition, education may contribute to greater understanding of factors and resources available that positively (or negatively) impact health. Overall, people with higher levels of education tend to be healthier than those with less formal education.<sup>[7]</sup>

#### Highest Level of Education

Census of population, Statistics Canada, 2016



Due to rounding, these may not add up to exactly 100%

## Employment

Employment provides income and a sense of security for individuals. Underemployment or unemployment can lead to lower rated levels of physical and mental well-being due to factors such as reduced income that lowers the ability to make ends meet, lack of employment benefits, and elevated stress levels. Employment conditions, such as workplace safety and hours of work, can also impact health.

## Employment rate (age 15+)

Census of population, Statistics Canada, 2016



**49%**

## Housing Stability

People with unsuitable, unaffordable, or inadequate housing are more likely to experience unstable housing, such as moving frequently, living in shelters, or staying with friends or family.<sup>[6]</sup> Moving often can be unsettling and have a large impact on wellness, especially on mental health.<sup>[8]</sup>



**38.2%**

Percentage of the population in 2016 who moved in the past 5 years

Data source: Census of population, Statistics Canada, 2016

## Community Belonging and Loneliness

People's sense of belonging to their local community relates to their social engagement and participation within their community.<sup>[9]</sup> Research has shown that social engagement and a strong sense of community belonging are associated with positive health outcomes.<sup>[10]</sup> Social engagement and community belonging are also linked to improved physical and mental health, even when influential factors such as age and sex are taken into account.<sup>[9,11]</sup> Loneliness, on the other hand, is shown to be associated with poorer physical and mental health outcomes,<sup>[12, 13]</sup> a particular concern for the elderly and frail who live alone.

Local and Indigenous governments, community organizations, and health authorities can promote social engagement and peoples' belongingness to their communities by supporting or providing a variety of social programming.



**41.2%**

Percentage of adult (18+) population who have a strong sense of community belonging

Data source: BC Centre for Disease Control. (2021). BC COVID-19 SPEAK Round 2 Survey.

Prepared by BC Center for Disease Control.





**9.5%**

Percentage of adult (18+) population who always feel lonely

Data source: BC Centre for Disease Control. (2021). BC COVID-19 SPEAK Round 2 Survey.  
 Prepared by BC Centere for Disease Control.

### Sociodemographic diversity

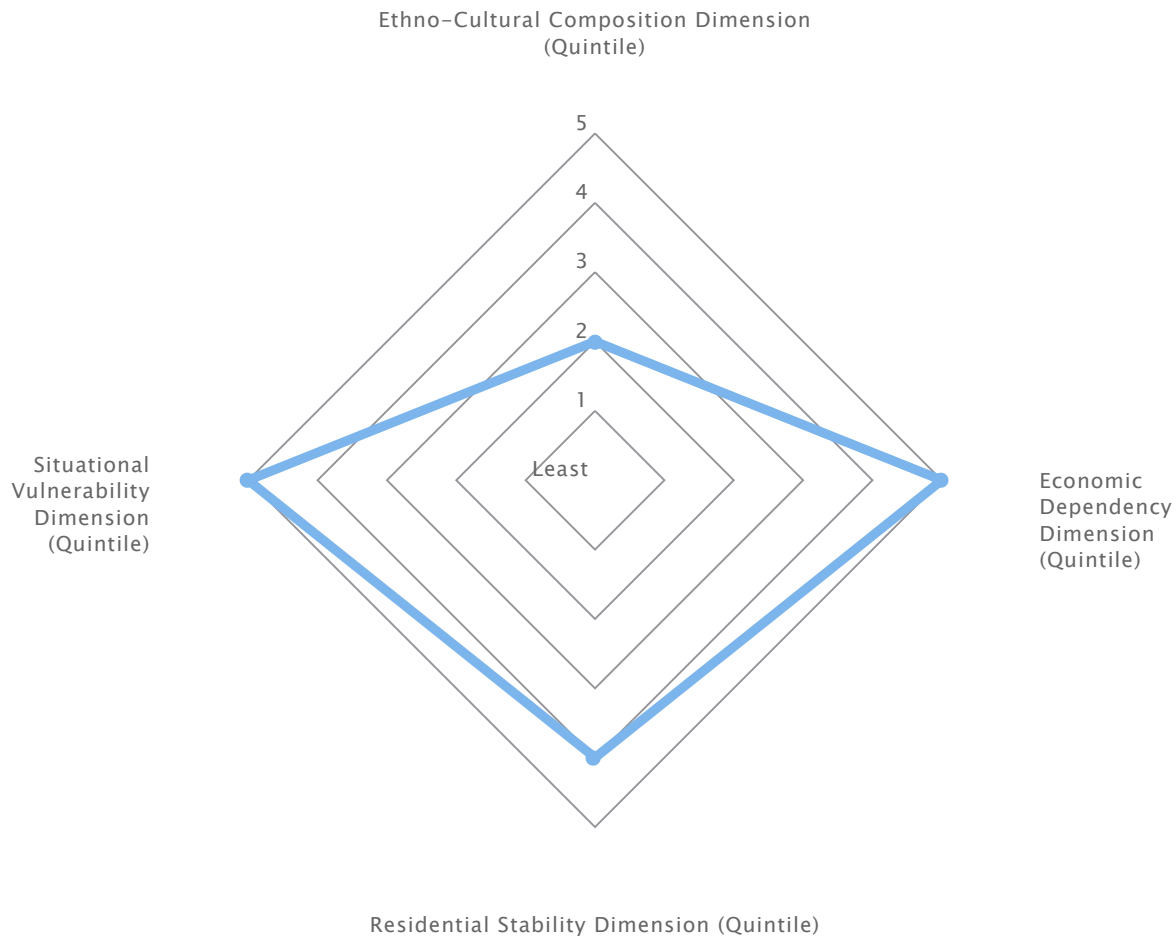
People may have different experiences accessing resources based on their gender, race, age, ethnicity, language spoken, etc., which can shape their material and social circumstances. In turn, people’s health and well-being are influenced by the dynamic interplay between many factors, including where they live and work, their demographic and socioeconomic characteristics, and other social and material elements.<sup>[14,15,16]</sup>

By capturing the geographic, demographic, and socioeconomic factors known to be important to health equity, the British Columbia Index of Multiple Deprivation (BCIMD) provides a summary measure for each CHSA that can reflect the sociodemographic diversity and inequities that exist in these complex systems.<sup>[17]</sup>

The BCIMD comprises four dimensions: residential instability, economic dependency, ethno-cultural composition, and situational vulnerability. Within a dimension, each CHSA receives a score. The scores for all CHSAs are then ordered based on the number value and categorized into five groups or quintiles.

Quintile 1 of the index represents the least deprived (or least diverse), and quintile 5 represents the most deprived/diverse CHSA in each dimension. This way, distinctive characteristics of a community can be captured using the BCIMD, where a given CHSA may have a high quintile ranking in one dimension and a low quintile ranking in another.

### Quintile rankings of Cowichan Valley West CHSA in the four dimensions of British Columbia Index of Multiple Deprivation



Quintile 1 of the index represents the least deprived (or least ethno-culturally diverse), and quintile 5 represents the most deprived/diverse in each dimension.

Data source: BC Centre for Disease Control. (2022). BC's Index of Multiple Deprivation for Community Health Service Areas. Prepared by BC Centre for Disease Control.

Area-based socioeconomic indicators, such as the BCIMD, are population-level metrics. While they do not necessarily represent the experience of individuals, they can be and have been used to inform strategies to improve patient care and public health services at the community level.

### **Situational vulnerability**

Situational vulnerability refers to differences in sociodemographic conditions or factors including housing and education. The indicators included in this dimension measure concepts such as the proportion of population that identifies as Indigenous, the proportion of population aged 25-64 without a high school diploma, the proportion of dwellings needing major repairs, the proportion of population that is low-income, and the proportion of single parent families.

### **Ethno-cultural composition**

Ethno-cultural composition refers to the ethnic and cultural diversity within a community. The indicators included in this dimension measure concepts such as the proportion of population who self-identify as a visible minority, the proportion of population that is foreign-born, the proportion of population who are recent immigrants, and the proportion of population who are linguistically isolated (have no knowledge of either official languages).

### **Economic dependency**

Economic dependency refers to the household dependency on the workforce or on other sources of income. The indicators included in this dimension measure concepts such as the proportion of population participating in the labour force, the proportion of population aged 65 and older, the ratio of employment to population, and the dependency ratio (the population aged 0-14 years and aged 65 years and older divided by the population aged 15-64 years).

### **Residential instability**

Residential instability refers to the tendency of people who live in their neighbourhood to change their place of residence over time, while considering characteristics such as housing and family. The indicators included in this dimension measure concepts such as the proportions of dwellings that are apartment buildings, the proportion of people living alone, the proportion of dwellings that are owned, and the proportion of population who moved within the last five years.

## **Built Environment**

The built (or physical) environment can promote healthy behaviours and reduce injuries by reducing environmental hazards and/or increasing access to healthy food outlets, affordable safe housing, safe and accessible transportation systems, recreational spaces, and opportunities for social connectedness. A community's built environment determines which healthy and safe options are available, affordable, and accessible for everyone.

Local communities can create healthier built environments for residents by integrating health and access to physical activity into planning and policy activities.

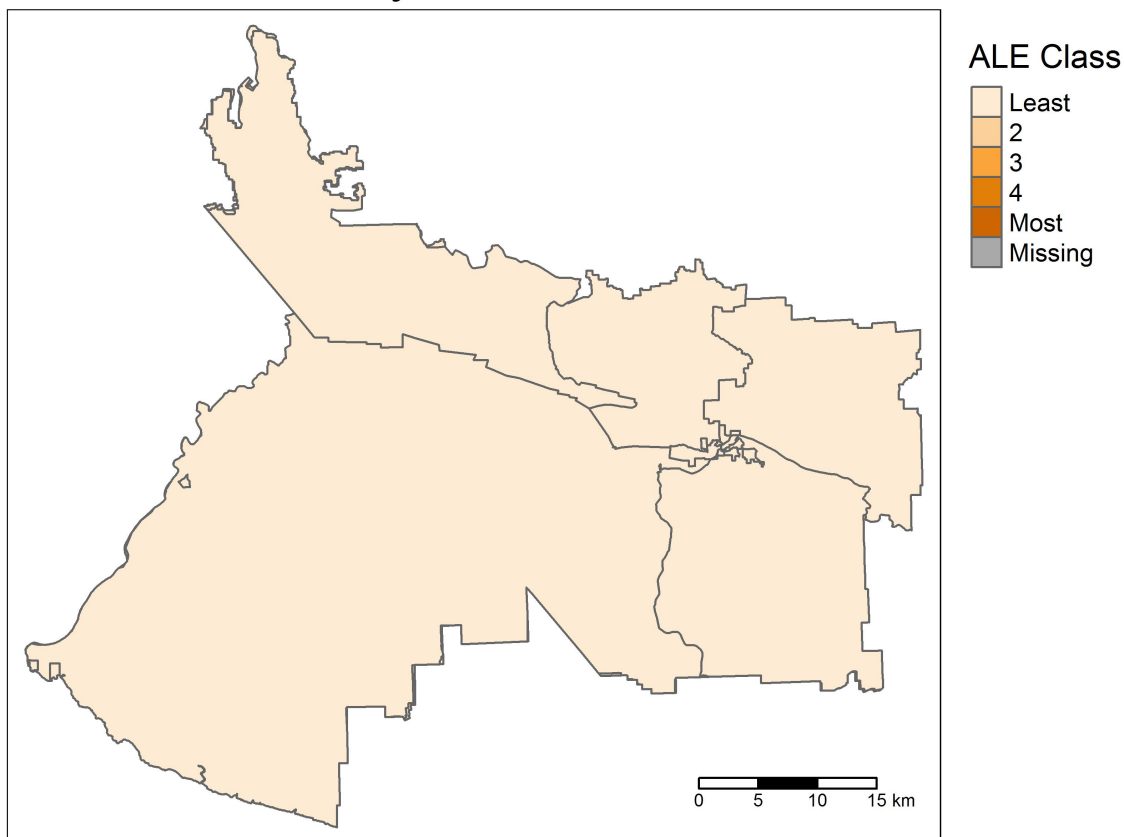
## Active Living Environment

Built environments support physical activity in daily life through walking, cycling, and using public transportation. The Canadian Active Living Environments (Can-ALE) database provides a set of measures that represent the active living friendliness, or “walkability”, of neighbourhoods.<sup>[18]</sup> In the map shown below, “least” means the dissemination area (DA) is least favourable to active living and “most” means the area is most favourable to active living.<sup>[18]</sup>

## Canadian Active Living Environments Class

McGill University (2019)

### Cowichan Valley West

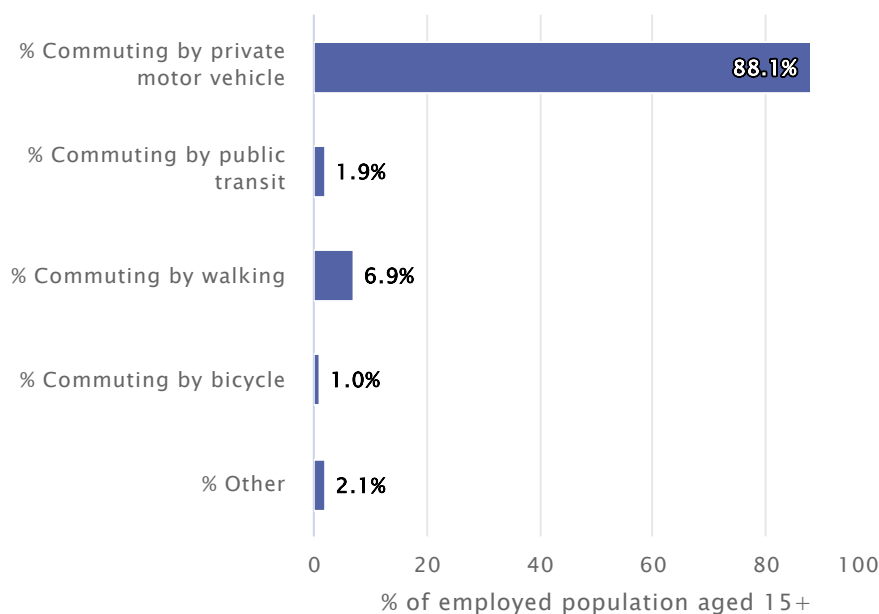


Caution for Analysis of Certain DAs in Rural Areas: Although Can-ALE measures are valid for most rural areas, there are certain DAs with uncommon built or economic environments that may affect statistical analysis (e.g., isolated resort areas, remote communities not connected by road).

**Dissemination Area:** A dissemination area (DA) is a small, relatively stable geographic unit composed of one or more adjacent dissemination blocks with an average population of 400 to 700 persons based on data from the previous Census of Population Program. Dissemination areas are the smallest standard geographic areas for which all census data are disseminated. Each CHSA includes several dissemination areas.

## Mode of Transportation to Work

Census of population, Statistics Canada, 2016



# 13%

Percentage of the population aged 15+ who have a commute of equal to or greater than 60 minutes

(Census of population, Statistics Canada, 2016)

Due to rounding, these may not add up to exactly 100%

## Climate change

Climate change is affecting the health and well-being of communities in BC, and these impacts will continue in the decades ahead. Climate change can affect health and well-being directly and indirectly and on different timelines.

People across the province of BC may be impacted differently. The effects of climate change vary in different locations. Some areas are experiencing faster warming, some are experiencing more wildfires and droughts, and some are experiencing more storm surges and sea level rise. Some people and communities are also more susceptible to the health impacts of climate change. Factors that increase risk include lower income, less social support, disabilities, older age, chronic diseases, and mental illnesses.<sup>[19]</sup> Work is currently underway in BC to develop indicators of community susceptibility to different climatic changes. Until this work is complete, there is existing information that communities can use to understand their climate risks.

For information about how climate change may impact your community, visit [climatedata.ca](https://climatedata.ca).

To access other climate change resources for British Columbians, visit [Plan2Adapt](#) from the Pacific Climate Impacts Consortium.

## Health Behaviours

What we eat, how much alcohol we drink, how physically active we are, whether or not we smoke or vape tobacco products, and whether or not we take steps to prevent injury (such as wearing a life jacket, seatbelt, or a helmet) are all considered "personal health practices" or health behaviors. These practices have an impact on our health and well-being.

### Protective Equipment Use

The appropriate use of protective equipment can reduce the likelihood of serious injury. For example, wearing a helmet when bicycling, skiing, or snowboarding can significantly reduce the incidence and severity of head injuries.<sup>[33,34,35]</sup> Wearing a life jacket while boating reduces incidence of drowning by 80%.<sup>[36]</sup> Seatbelt use reduces the chances of an injury when in a vehicle crash by 53%.<sup>[37]</sup>

### Smoking/Vaping

Smoking contributes to a variety of health problems, including cancer and cardiovascular disease. It remains a leading cause of preventable death in British Columbia. The use of vaping products that contain nicotine can increase the risk of diseases associated with nicotine consumption (e.g., nicotine addiction) and other health conditions.<sup>[20]</sup> Conversely, reductions in tobacco smoking have been associated with substantial reductions in the prevalence of cardiovascular disease and some cancers over the past two decades.<sup>[21]</sup> This decrease in tobacco smoking resulted in corresponding reductions in the demand for healthcare services related to these diseases.<sup>[21]</sup>

### Physical Activity

Physical activity can include recreation and sports, exercising, and active forms of transportation like walking or biking.<sup>[22]</sup> Health benefits of physical activity include reduced risk for multiple chronic diseases as well as improved fitness, strength, mental wellbeing, and overall quality of life.<sup>[22,23]</sup> Communities can offer programs and services that increase physical activity awareness, build skills to engage in physical activity, and positively influence personal health practices. Supportive social and physical environments can improve everyone's ability to adopt more physical activities.

### Binge Drinking

Consuming alcohol can contribute to poorer self-reported health<sup>[24]</sup> and increase the risk of health problems such as cardiovascular disease,<sup>[25]</sup> cancer, and liver disease.<sup>[26]</sup> It is also linked to various risk factors of poor health including psychological distress, and has been heavily implicated in most areas of injury including motor vehicle, workplace, suicide and self-harm, interpersonal violence, falls, drownings, and poisonings.<sup>[27,28,29,30,31]</sup>

#### Physically active Adult population (18+)

BC COVID-19 SPEAK Round 2 Survey (2021). BC  
Centre for Disease Control.



**70.5%**

#### Smoke or vape daily/occasionally Adult population (18+)

BC COVID-19 SPEAK Round 2 Survey (2021). BC  
Centre for Disease Control.



**18.2%**

#### Binge drink Adult population (18+)

BC COVID-19 SPEAK Round 2 Survey (2021). BC  
Centre for Disease Control.



**27.6%**

**Physically active:** Percentage of population 18+ years old who have more than 150 minutes per week of physical activity.

Canada's Movement & Activity Guidelines recommend adults, including seniors, to have at least 150 minutes of moderate to vigorous aerobic physical activity per week.<sup>[32]</sup> This refers to having moderate or vigorous physical activity that makes one breathe harder than normal on 5 or more days and, on average, for 30 minutes or more on one of those days in the past 7 days. Physical activities can include exercise, dancing, active commuting, cycling, sports, active chores, climbing stairs, heavy lifting/digging/construction.

**Smoke or vape daily/occasionally:** Percentage of population 18+ years old who smoke or vape daily or occasionally.

**Binge drink:** Percentage of population 18+ years old who binge drink among those who reported drinking alcohol in the past 12 months. Binge drink is defined as having 5 or more alcoholic beverages for males or 4 or more alcoholic beverages for females on one occasion at least once per month over the past 12 months.

## Attachment to a Primary Care Practitioner or Group Practice

Access to primary care is an important determinant of health. Therefore, improving equitable access to health care is a key strategy to reduce health inequities.<sup>[38]</sup> Primary care providers, such as general practitioners (GPs), are usually the first point of contact to the healthcare system.<sup>[39]</sup> Having a primary care provider improves access to and continuity of care,<sup>[40,41]</sup> coordination of disease management,<sup>[42]</sup> and health outcomes.<sup>[40,43,44]</sup>

Individuals who are attached to a primary care practitioner or group practice have an ongoing relationship with a regular primary care provider or team who understands their health needs. As a result, they have ready access to more convenient, comprehensive, and integrated care, which are important for life-long health.<sup>[45]</sup>



**76.3%**

Percentage of population who are attached to a general practitioner or group practice

Data source: B.C. Ministry of Health. (2021). Attachment to Practice by CHSA, Fiscal Year 2020/2021.

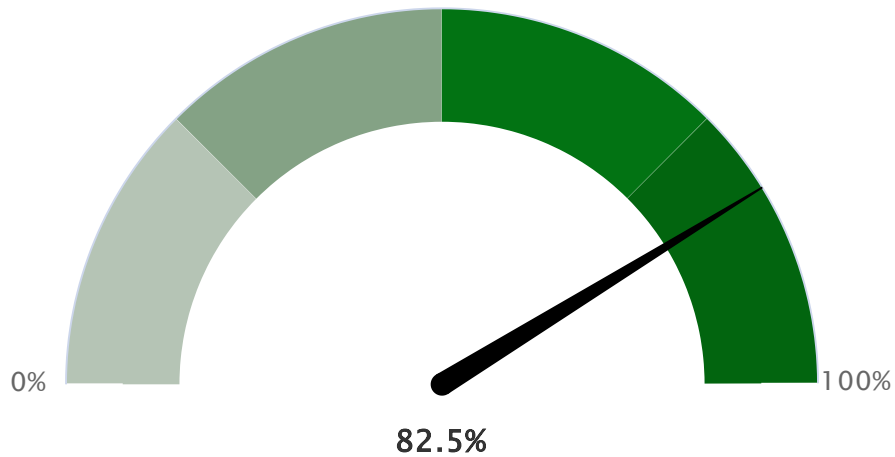
## Health Status

### General Health Status

An individual's own perception of their overall health is an indicator of general health, which not only encompasses the absence of disease or injury but also physical, mental, and social well-being. At a population-level, self-reported health status predicts help-seeking behaviours and health service use.<sup>[46,47]</sup> Factors that may influence an individual's rating of their overall health include their physical health, health behaviours, demographics, as well as socioeconomic and psychosocial factors.<sup>[47]</sup>

#### Percentage of adult (18+) population with self-reported good general health

Data source: BC Centre for Disease Control. (2021). BC COVID-19 SPEAK Round 2 Survey. Prepared by BC Centre for Disease Control





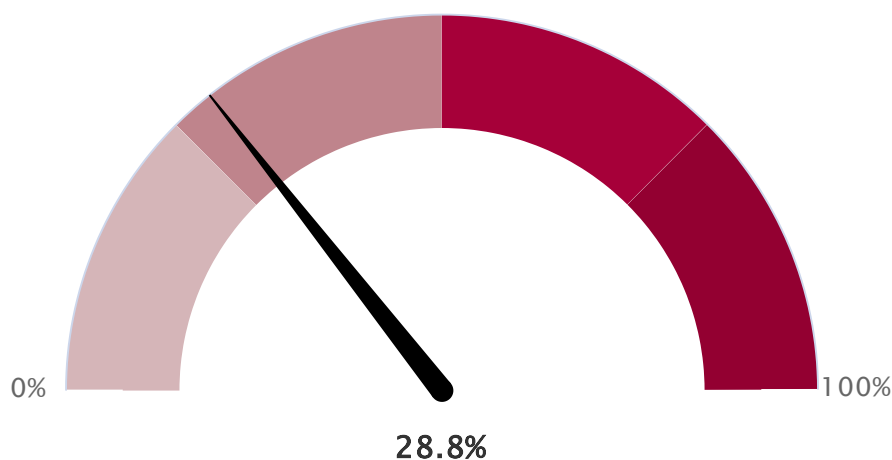
## General Mental Health Status

Good mental health allows people to enjoy life, cope with stress, and bounce back from major setbacks. Just like physical health, good mental health is a resource for everyday living.

At the population-level, poor self-reported mental health can be used to estimate the prevalence of mental health concerns that may affect health service utilization.<sup>[47,48]</sup>

### Percentage of adult (18+) population with self-reported poor general mental health

Data source: BC Centre for Disease Control. (2021). BC COVID-19 SPEAK Round 2 Survey. Prepared by BC Centre for Disease Control



## Health of Mothers and Newborns

Mother and newborn health are key indicators of the health and well-being of families and the overall population. Pregnancy and childbirth have a major impact on the physical, mental, emotional, and socioeconomic health of pregnant people and their families. Pregnancy-related health outcomes are influenced by the person's general health and other factors like income, age, race, and ethnicity. Factors related to newborn health, such as birth weight, are key determinants of infant and childhood health, as well as growth, cognitive development, and health later in life.<sup>[49]</sup> Children's experiences in their early years have long-lasting implications for the health and well-being of both themselves and society.<sup>[50]</sup> Collectively, these factors are important predictors of public health issues related to pregnancy, healthcare during pregnancy, and post-partum health and nutrition.<sup>[49]</sup>

### Preterm birth

B.C. Perinatal Data Registry, January 1 to December 31, 2020. Perinatal Services BC. (2022).

**5.6%**

### Small for gestational age

B.C. Perinatal Data Registry, January 1 to December 31, 2020. Perinatal Services BC. (2022).

**0.0%**

### Low birth weight

B.C. Perinatal Data Registry, January 1 to December 31, 2020. Perinatal Services BC. (2022).

**0.0%**



**33.3%**

Percentage of cesarean deliveries

Data source: Perinatal Services BC. British Columbia Perinatal Data Registry. Years Provided: 01/01/2020 to 31/12/2020. Resource Type: Tabulated Data. Data Provided on May 26, 2022.

**Preterm birth:** Proportion of babies delivered before 37 completed weeks of estimated gestation.

**Small for gestational age:** Proportion of babies born weighing less than the 10th percentile of weight for their sex and gestational age.

**Low birth weight:** Proportion of singleton babies born less than 2,500 grams.

**Cesarean delivery:** The baby was delivered by an incision in the mother's abdomen.

## Health Status: Injuries

Injuries are predictable and preventable. A key strategy for supporting healthy communities is through injury prevention. Some injuries result in little more than scrapes or bruises, while others can lead to significant harm requiring time and rehabilitation for healing, permanent disability, and even death. Examples of preventable injuries include concussions, broken bones, poisonings, heat exhaustion, frostbite, burns, or drownings. Preventable injuries are often unintentional, but they can also be intentionally inflicted such as gunshot wounds or traumatic brain injuries (e.g., from violence, self-inflicted injuries, and suicide).

The most frequent types of injury-related hospitalizations and deaths vary by age group. Across the lifespan, falls and motor-vehicle-incidents are the most common causes of unintentional injuries. The most common type of intentionally inflicted injuries are self-harm and suicide. These mechanisms of injuries have been identified as key priorities for BC.<sup>[51,52]</sup>

For more comprehensive data on injuries in BC, please see the [BC Injury Research and Prevention Unit data and surveillance webpage](#).

## Health Status: Chronic Diseases

One of the biggest challenges to achieving healthy communities is the prevention and management of chronic conditions, especially with an aging British Columbian population. Chronic diseases are diseases that are persistent and generally slow in progression, such as diabetes, chronic respiratory illnesses, high blood pressure, and heart disease. Chronic conditions can result from a combination of genetics, lifestyle practices, and environmental risks. The section below provides a glimpse into the rates of major chronic diseases in the CHSA. This section also includes comparisons to the health status of other CHSAs within the same Local Health Area.

### Cancer

Cancer is the leading cause of death in Canada. About half of all cancers may be prevented through factors such as healthy eating, physical activity, avoiding harmful use of substances such as tobacco, and reduced sun exposure.<sup>[53]</sup>



**All Cancers (all ages)**

Crude Incidence (per 100,000 population per year): 796.3



**Female Breast Cancer (all ages)**

Crude Incidence (per 100,000 population per year): 202.5



**All Cancer Deaths (all ages)**

Crude Mortality (per 100,000 population per year): 323.3



**Colorectal Cancer (all ages)**

Crude Incidence (per 100,000 population per year): 101.8

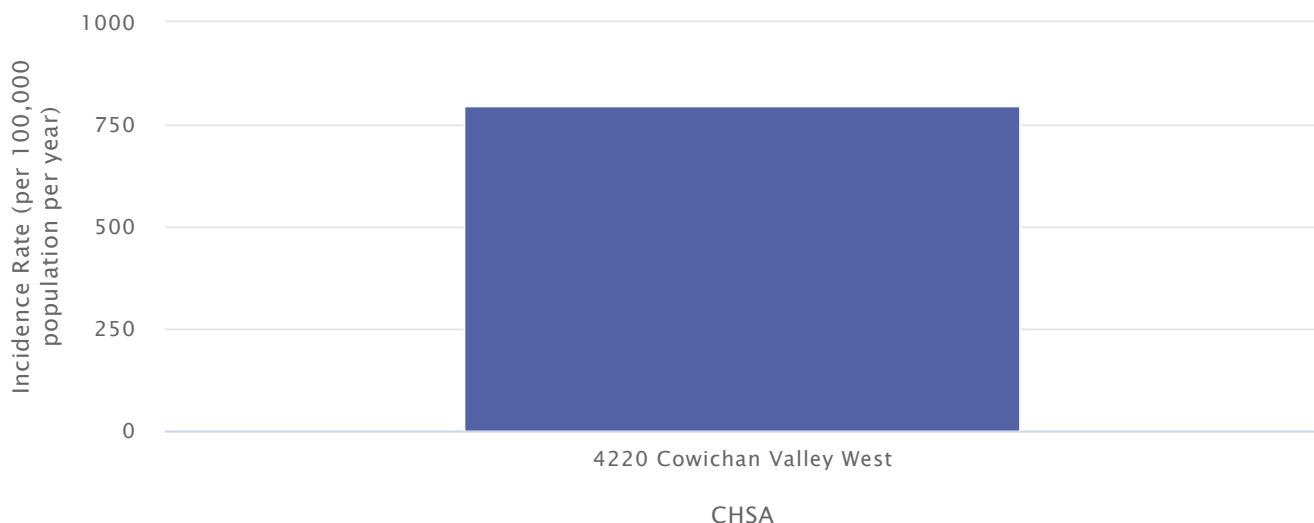
Data source: BC Cancer Registry, 2016-2020

### Crude Incidence and Mortality Rates of Cancer across Neighbouring CHSAs

The following section shows the crude incidence and mortality rates of cancers in all CHSAs within their Local Health Area. If any Local Health Area has only one CHSA, there will be only one bar shown in the chart for that CHSA.

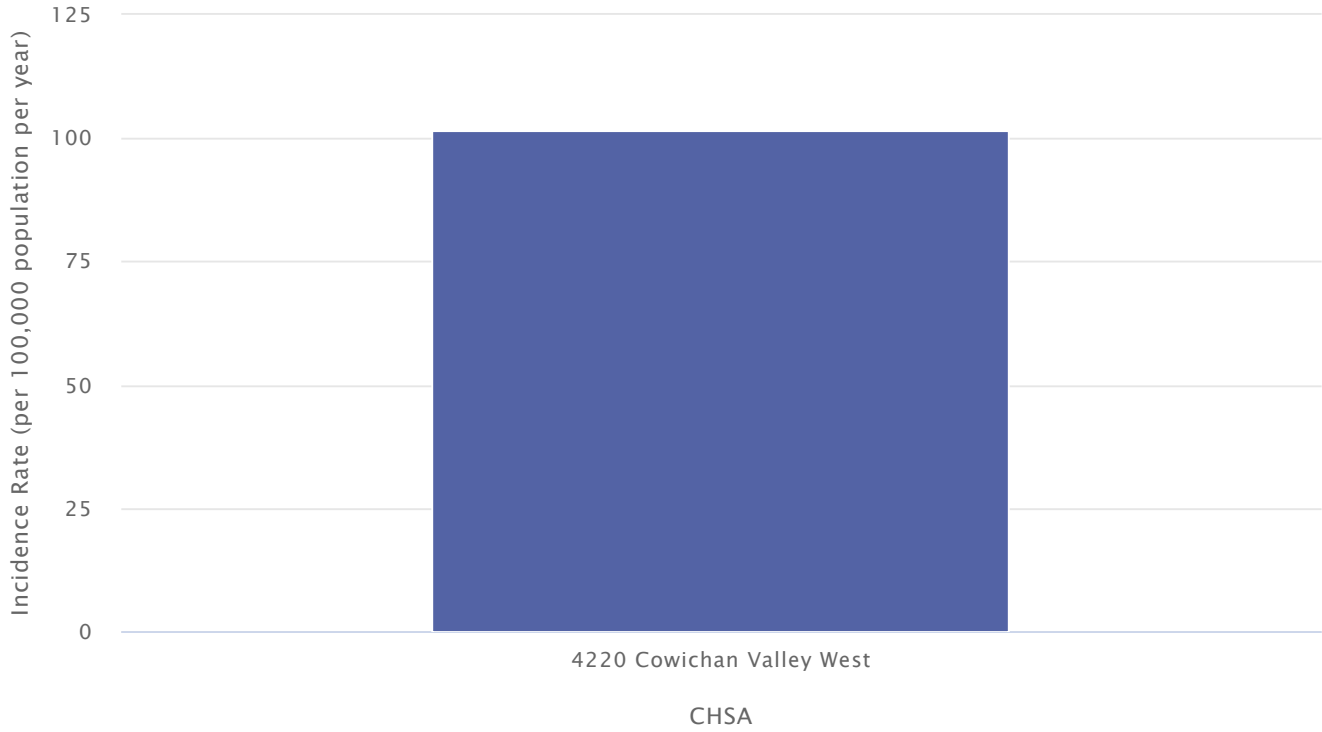
Crude Incidence Rates of All Cancers for all CHSAs in Cowichan Valley West (LHA)

BC Cancer Registry (2016-2020)



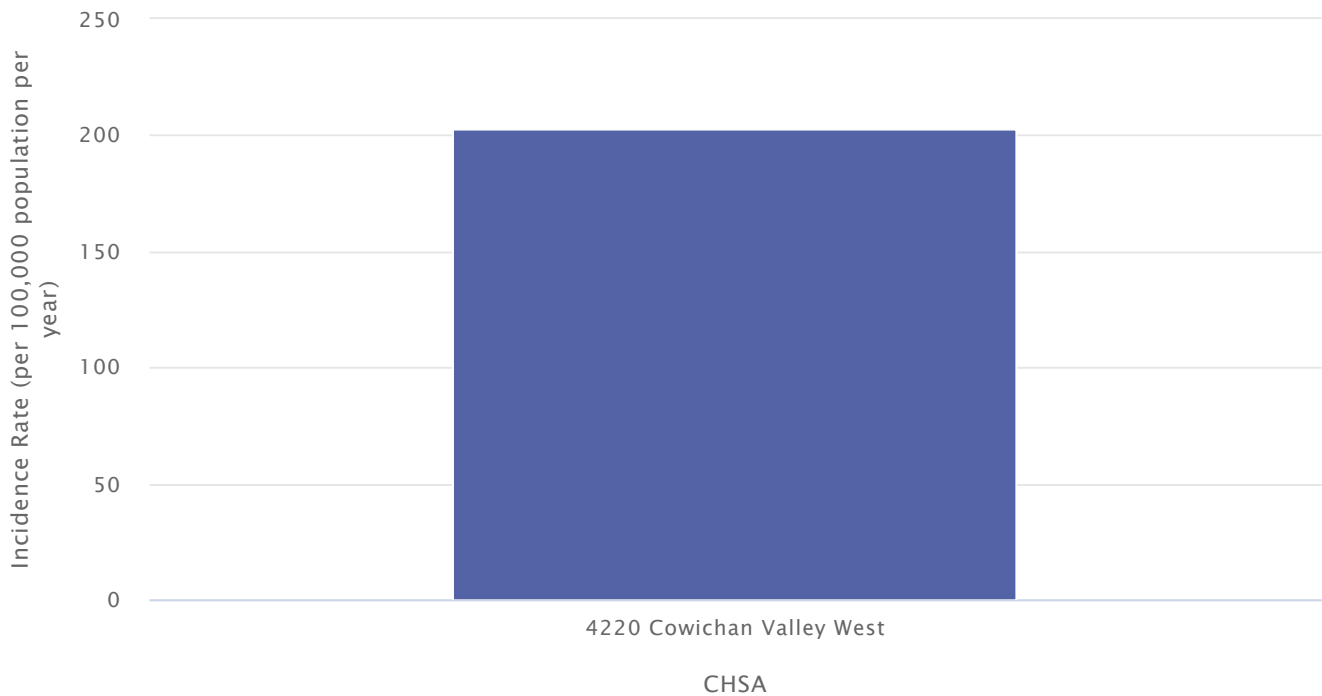
Crude Incidence Rates of Colorectal Cancer for all CHSAs in Cowichan Valley West (LHA)

BC Cancer Registry (2016–2020)



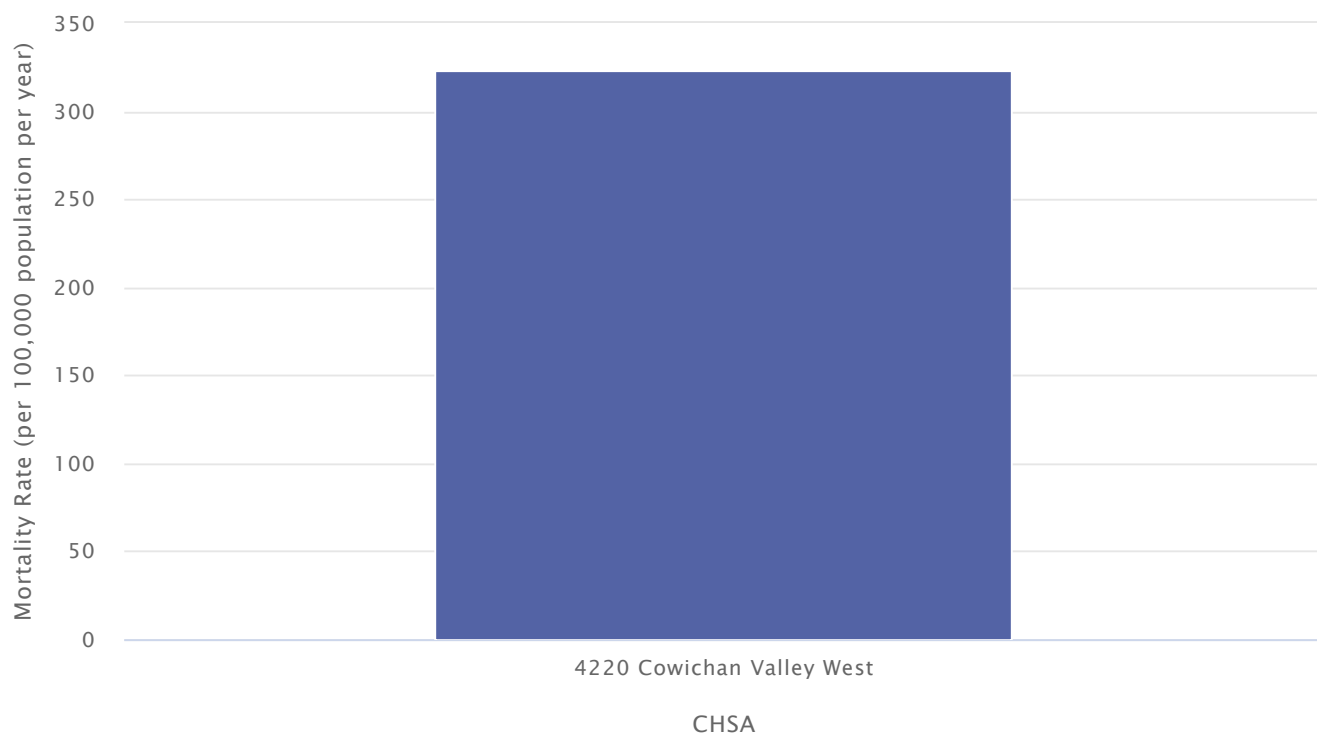
Crude Incidence Rates of Female Breast Cancer for all CHSAs in Cowichan Valley West (LHA)

BC Cancer Registry (2016–2020)



### Crude Mortality Rates of All Cancers for all CHSAs in Cowichan Valley West (LHA)

BC Cancer Registry (2016–2020)



## Heart and Circulatory Illness

Cardiovascular diseases are conditions that affect the heart and blood vessels. Examples of cardiovascular disease include heart attacks, strokes, heart failure, and ischemic heart disease. High blood pressure, also called hypertension, increases the risk of a number of chronic conditions including diabetes and other cardiovascular diseases.



### Hospitalized Acute Myocardial Infarction (age 20+)

Crude Incidence (per 1000): 2.9  
Crude Prevalence (per 1000): 30.4



### Heart Failure (age 1+)

Crude Incidence (per 1000): 4.3  
Crude Prevalence (per 1000): 29.3



### Hospitalized Stroke (age 20+)

Crude Incidence (per 1000): 2.1  
Crude Prevalence (per 1000): 14.5



### Hypertension (age 20+)

Crude Incidence (per 1000): 18.9  
Crude Prevalence (per 1000): 321.4



### Ischemic Heart Disease (IHD) (age 20+)

Crude Incidence (per 1000): 7.7  
Crude Prevalence (per 1000): 94.5

Data source: B.C. Chronic Disease Registry, 2020-21

## Chronic Respiratory Illness

Asthma and Chronic Obstructive Pulmonary Disease (COPD) are two common chronic respiratory diseases with significant impacts on health and wellbeing. Asthma often occurs in those with a genetic predisposition to the illness, though not always. This condition can be caused by allergens in the environment, tobacco smoke, exposures in the workplace, or air pollution. COPD is often caused by smoking but can also be caused or worsened by workplace exposures.



### Asthma (age 1+)

Crude Incidence (per 1000): 9.0  
Crude Prevalence (per 1000): 138.7



### Chronic Obstructive Pulmonary Disorder (COPD) (age 35+)

Crude Incidence (per 1000): 11.8  
Crude Prevalence (per 1000): 135.6

Data source: B.C. Chronic Disease Registry, 2020-21

## Mental Illness

Mental illness refers to psychiatric conditions such as depression, anxiety and mood disorders, schizophrenia and delusional disorders, dementia, and Alzheimer Disease.



### Alzheimer's Disease and Other Dementia (age 40+)

Crude Incidence (per 1000): 4.6  
Crude Prevalence (per 1000): 22.5



### Depression (age 1+)

Crude Incidence (per 1000): 16.1  
Crude Prevalence (per 1000): 339.0



### Mood & Anxiety Disorders (age 1+)

Crude Incidence (per 1000): 31.0  
Crude Prevalence (per 1000): 429.6



### Schizophrenia (age 10+)

Crude Incidence (per 1000): N/A  
Crude Prevalence (per 1000): 12.2

Data source: B.C. Chronic Disease Registry, 2020-21

## Neurological Conditions

Neurological disorders affect the central and peripheral nervous systems. These disorders include diseases such as epilepsy, Parkinsonism, and multiple sclerosis.



### Epilepsy (age 1+)

Crude Incidence (per 1000): 0.9  
Crude Prevalence (per 1000): 15.8



### Multiple Sclerosis (MS) (age 20+)

Crude Incidence (per 1000): N/A  
Crude Prevalence (per 1000): 3.7



### Parkinson's/Parkinsonism (age 40+)

Crude Incidence (per 1000): N/A  
Crude Prevalence (per 1000): 5.4

Data source: B.C. Chronic Disease Registry, 2020-21

## Bone Diseases

Bone diseases affect mobility and dexterity and are one of the leading causes of physical disabilities.<sup>[54]</sup> These conditions can affect individuals of all ages and include osteoarthritis, osteoporosis, rheumatoid arthritis, and gout.



### Gout/Crystal Arthropathies (age 20+)

Crude Incidence (per 1000): 3.5  
Crude Prevalence (per 1000): 50.1



### Osteoarthritis (age 1+)

Crude Incidence (per 1000): 9.3  
Crude Prevalence (per 1000): 162.5



### Osteoporosis (age 50+)

Crude Incidence (per 1000): 4.4  
Crude Prevalence (per 1000): 61.6



### Rheumatoid Arthritis (age 1+)

Crude Incidence (per 1000): N/A  
Crude Prevalence (per 1000): 20.3

Data source: B.C. Chronic Disease Registry, 2020-21

## Diabetes and Chronic Kidney Disease

Diabetes is one of the most common metabolic disorders. Diabetes usually occurs in adults, although rates among children are rising. Long term complications of diabetes include other chronic diseases such as cardiovascular disease and chronic kidney disease.<sup>[55]</sup> In addition to diabetes, other risk factors for chronic kidney disease include high blood pressure, heart disease, and other kidney diseases.



### Diabetes Mellitus (age 1+)

Crude Incidence (per 1000): 9.1  
Crude Prevalence (per 1000): 113.7



### Chronic Kidney Disease (CKD) (age 1+)

Crude Incidence (per 1000): 9.3  
Crude Prevalence (per 1000): 49.4

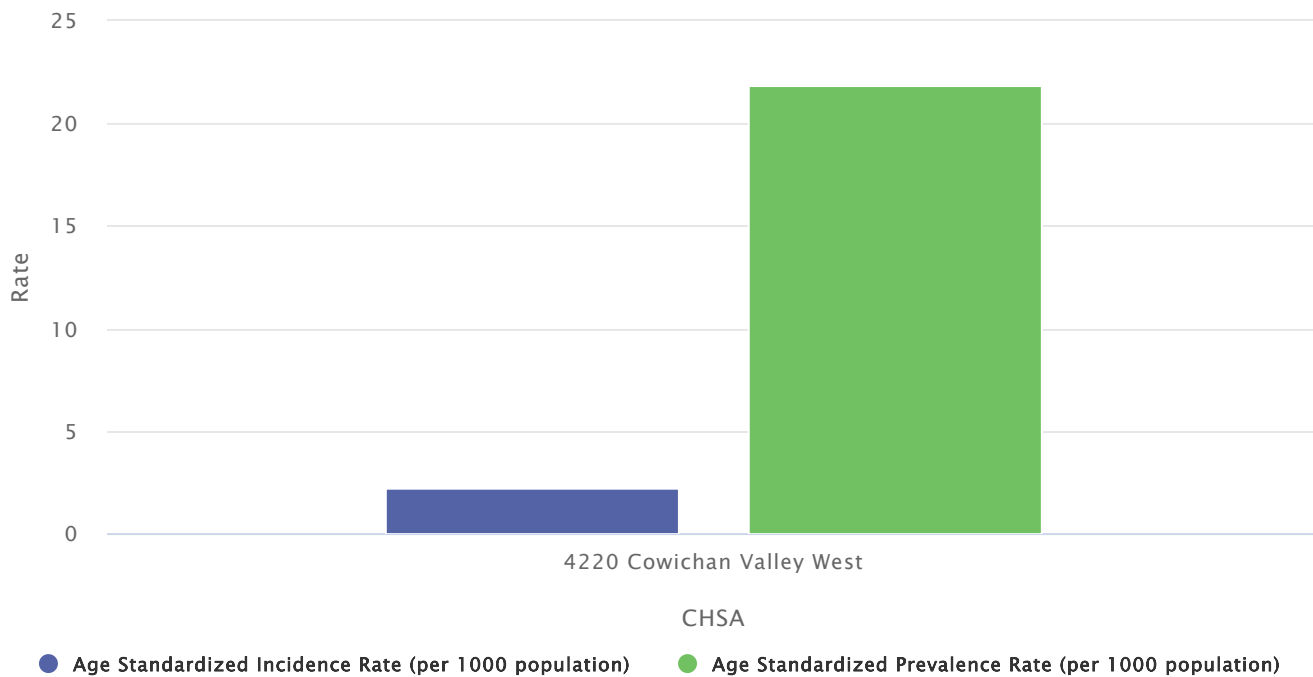
Data source: B.C. Chronic Disease Registry, 2020-21

## Age-Standardized Incidence and Prevalence Rates of Chronic Diseases across Neighbouring CHSAs

The following section shows the age-standardized prevalence and incidence rates for chronic diseases in all CHSAs within their Local Health Area. Some Local Health Areas have one CHSA and some have more than one. If a data bar is absent in the chart, the rate was calculated based on a small number of people. To protect the privacy and confidentiality of the individuals, such rates are not released publicly as per the BCCDC policy. Specific age-standardized incidence and prevalence rates for chronic disease are presented in Comparison to provincial and regional health authority averages – Chronic disease.

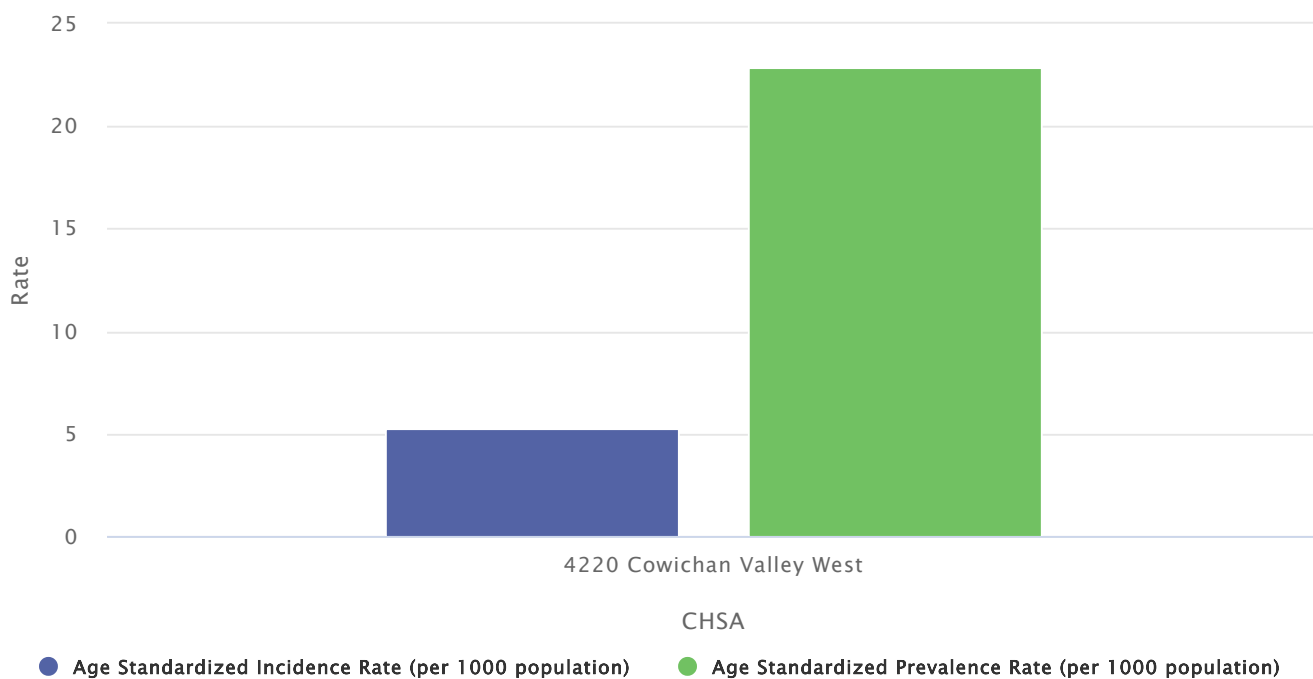
### Age-Standardized Incidence and Prevalence Rates of Acute Myocardial Infarction for all CHSAs in Cowichan Valley West (LHA)

B.C. Chronic Disease Registry (2020-21)



### Age-Standardized Incidence and Prevalence Rates of Alzheimer's Disease and Other Dementia for all CHSAs in Cowichan Valley West (LHA)

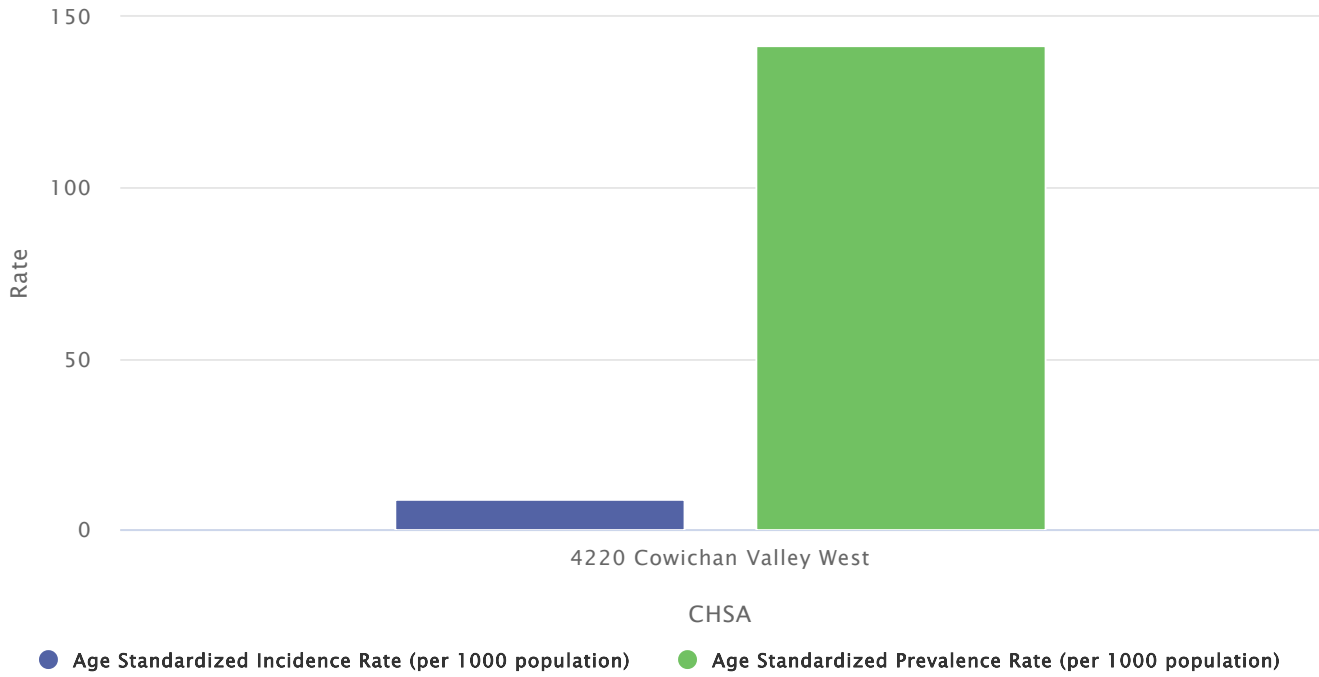
B.C. Chronic Disease Registry (2020-21)





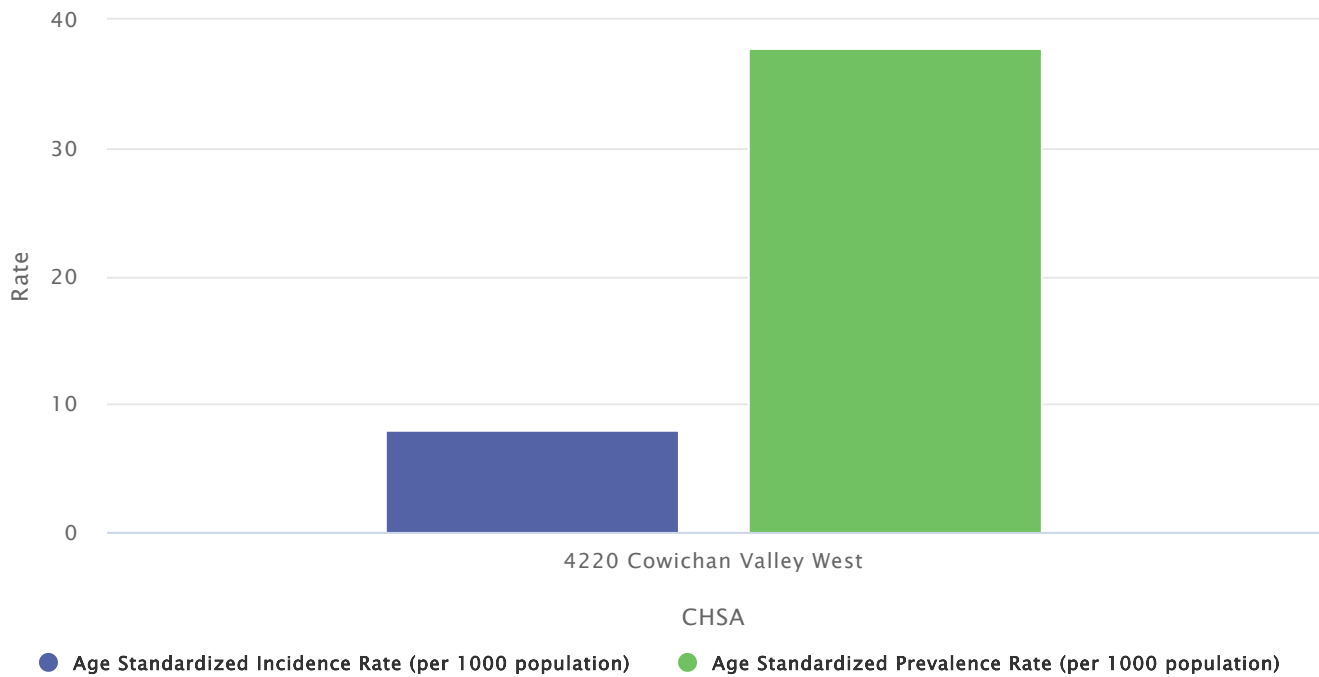
### Age-Standardized Incidence and Prevalence Rates of Asthma for all CHSAs in Cowichan Valley West (LHA)

B.C. Chronic Disease Registry (2020-21)



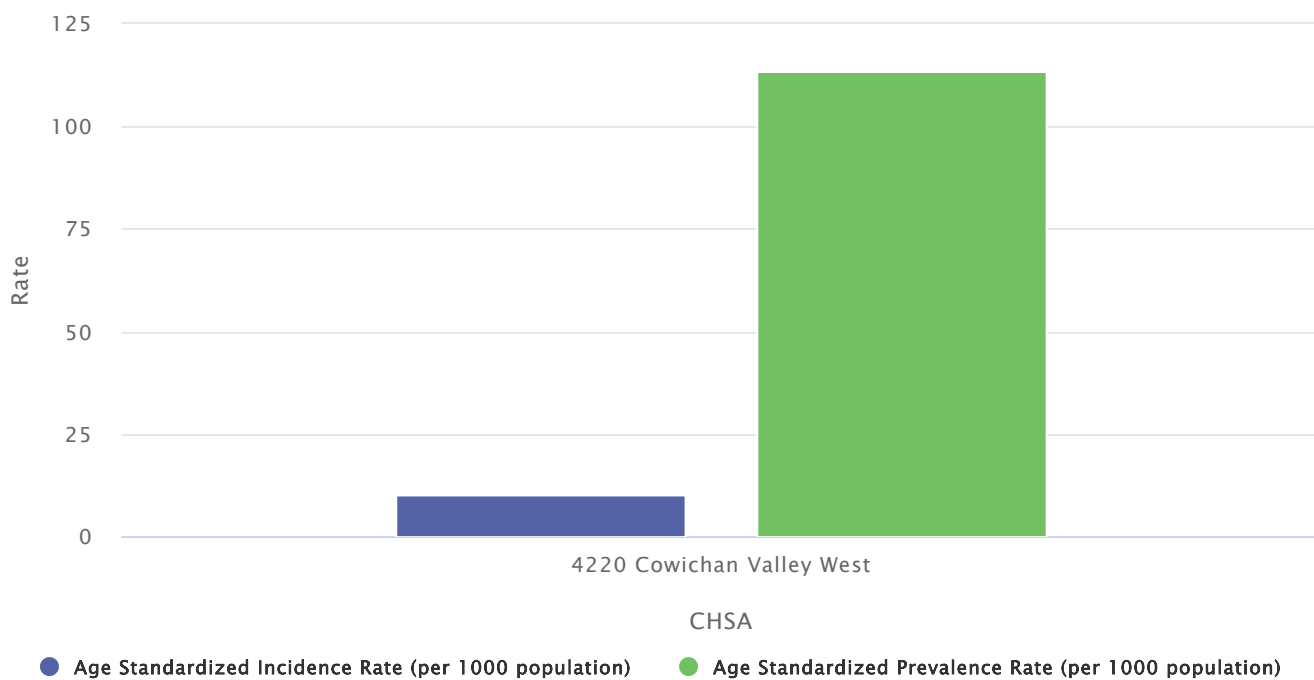
### Age-Standardized Incidence and Prevalence Rates of Chronic Kidney Disease for all CHSAs in Cowichan Valley West (LHA)

B.C. Chronic Disease Registry (2020-21)



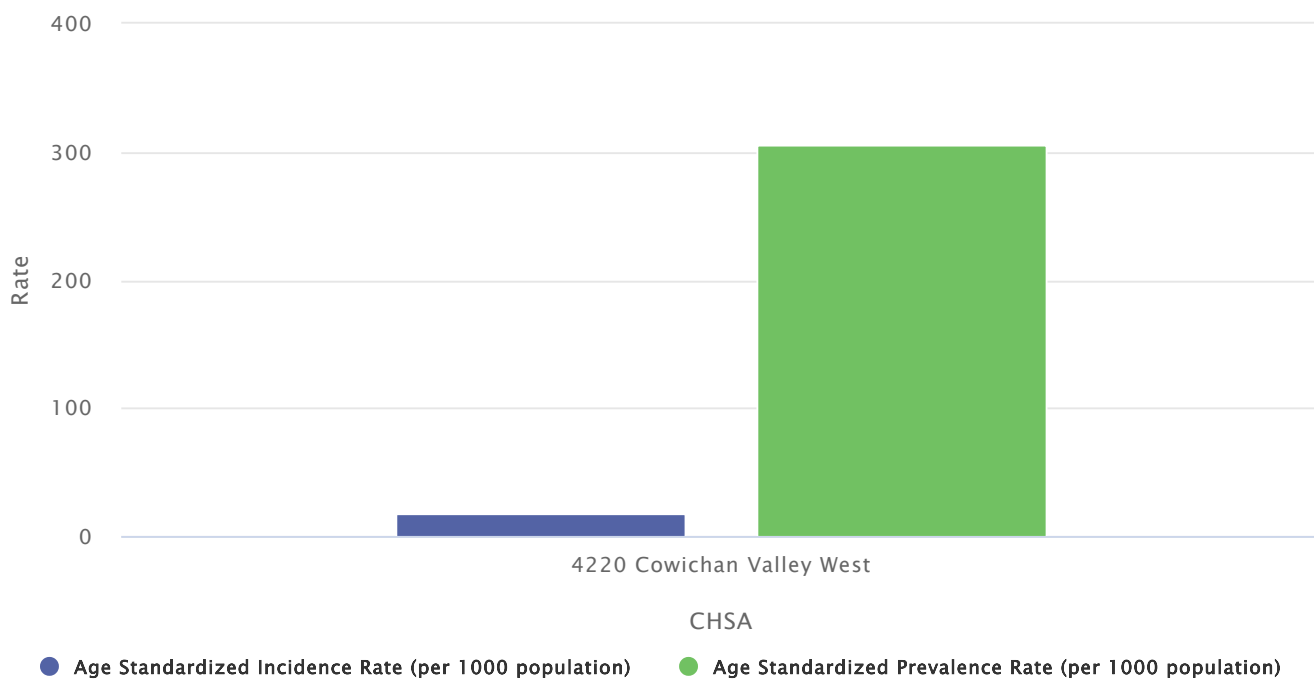
### Age-Standardized Incidence and Prevalence Rates of Chronic Obstructive Pulmonary Disease for all CHSAs in Cowichan Valley West (LHA)

B.C. Chronic Disease Registry (2020-21)



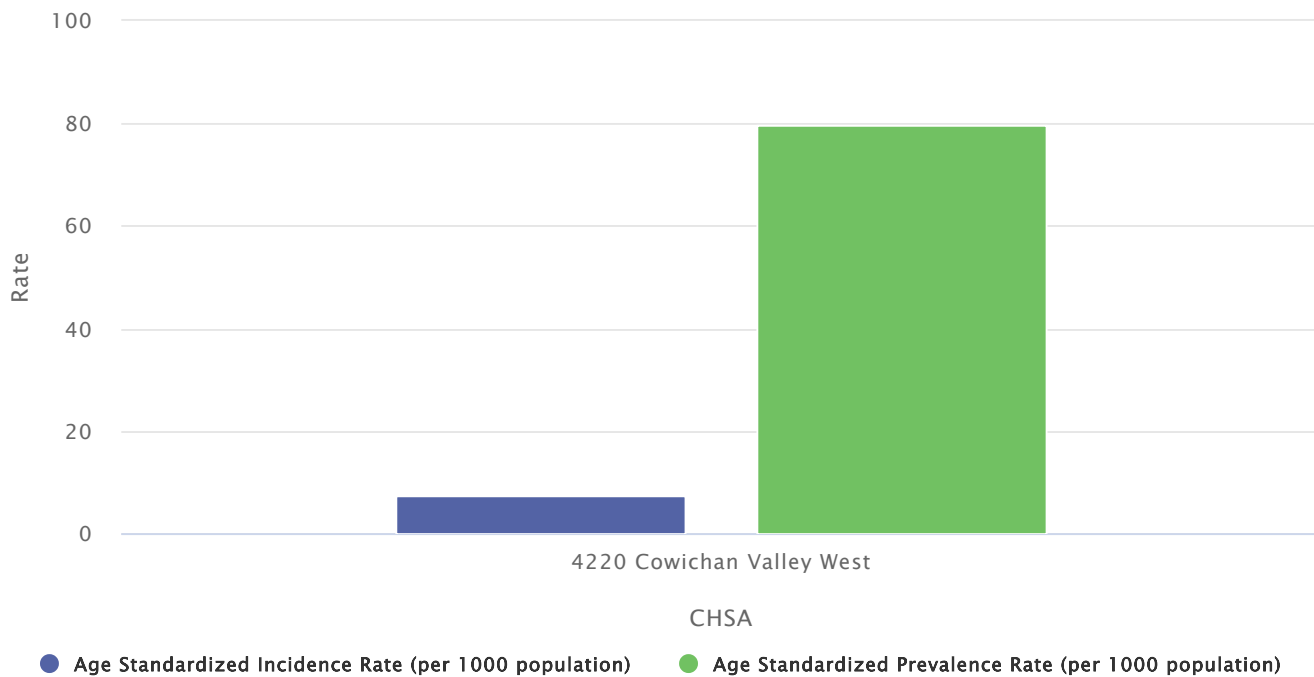
### Age-Standardized Incidence and Prevalence Rates of Depression for all CHSAs in Cowichan Valley West (LHA)

B.C. Chronic Disease Registry (2020-21)



### Age-Standardized Incidence and Prevalence Rates of Diabetes for all CHSAs in Cowichan Valley West (LHA)

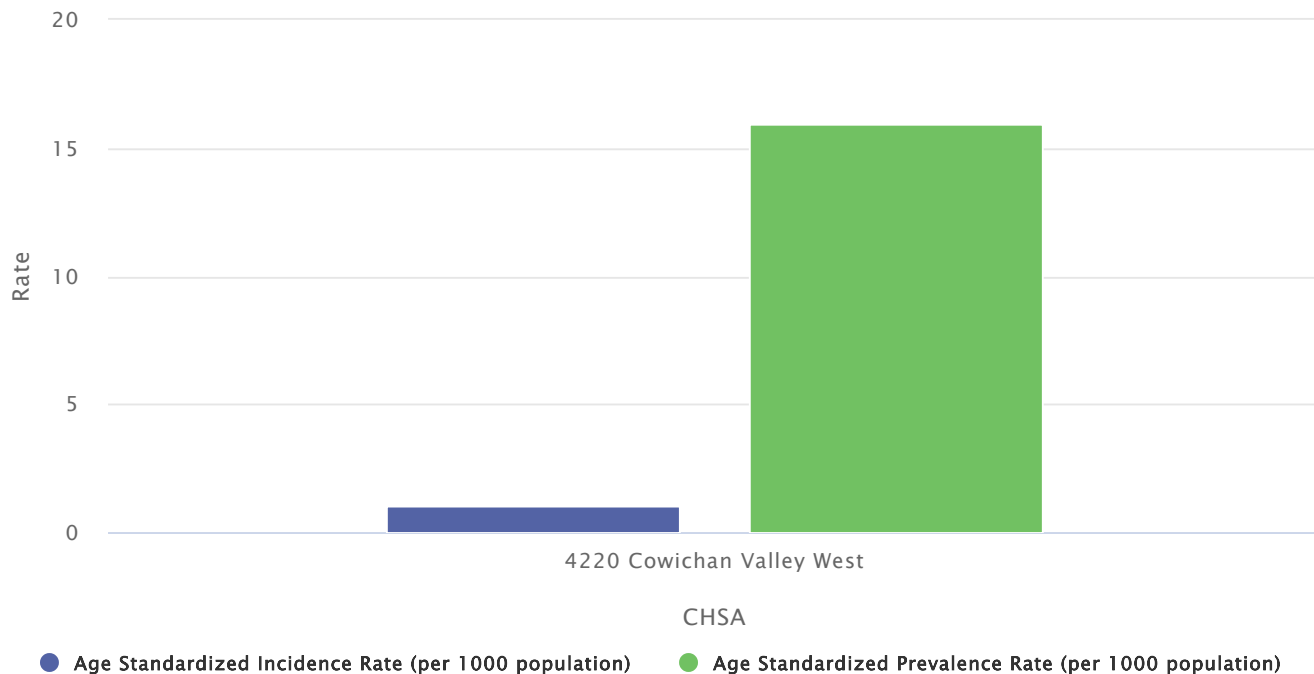
B.C. Chronic Disease Registry (2020-21)



Includes Type 1, Type 2, other specified and unspecified diabetes mellitus; excludes suspected gestational diabetes.

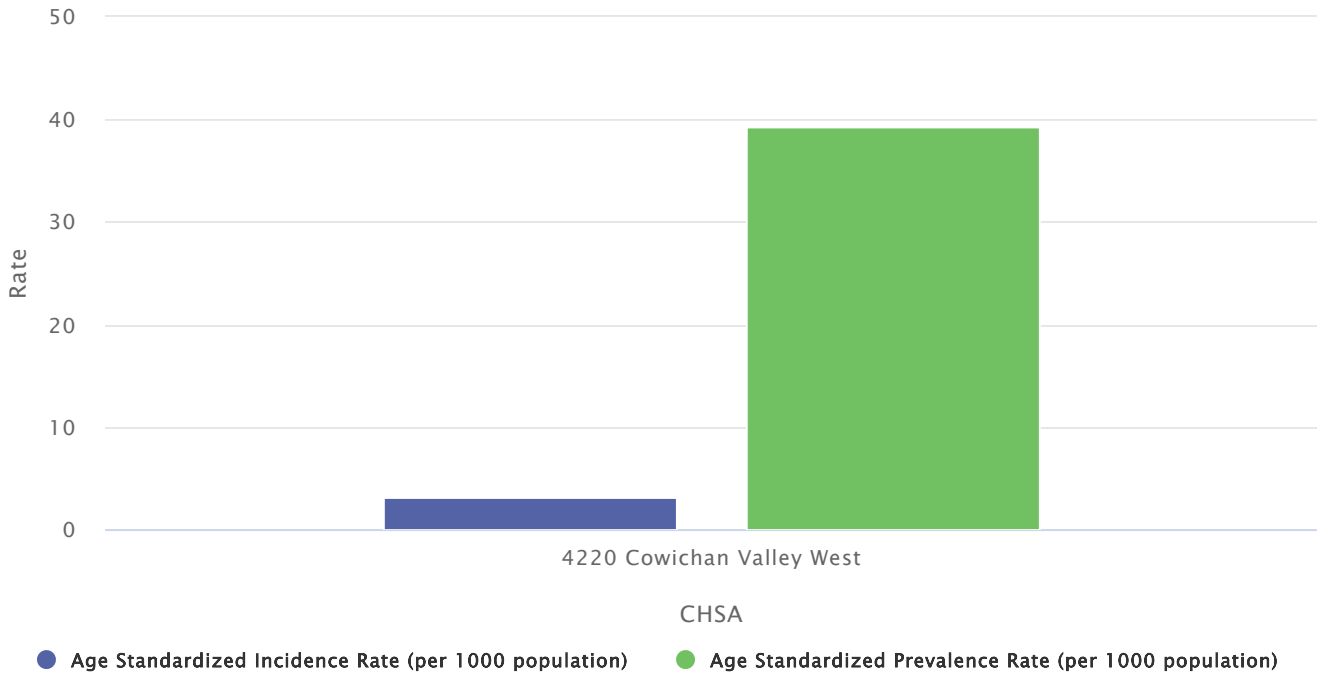
### Age-Standardized Incidence and Prevalence Rates of Epilepsy for all CHSAs in Cowichan Valley West (LHA)

B.C. Chronic Disease Registry (2020-21)



### Age-Standardized Incidence and Prevalence Rates of Gout for all CHSAs in Cowichan Valley West (LHA)

B.C. Chronic Disease Registry (2020-21)



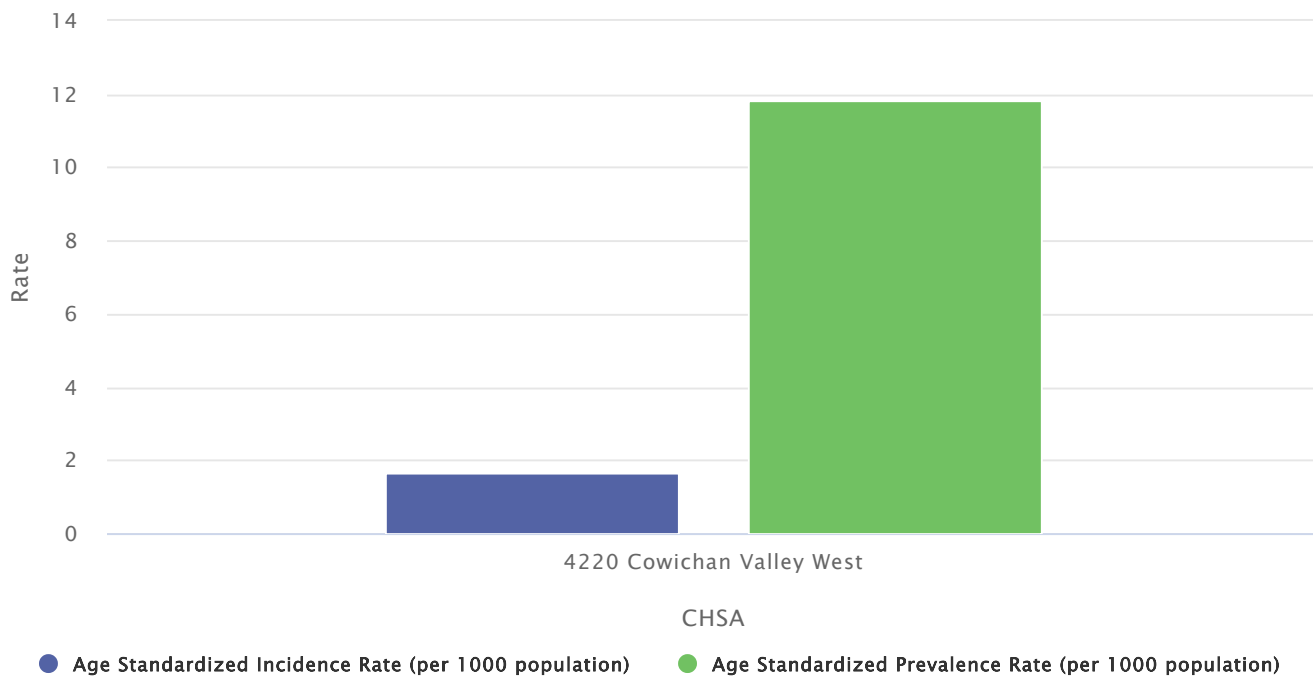
### Age-Standardized Incidence and Prevalence Rates of Heart Failure for all CHSAs in Cowichan Valley West (LHA)

B.C. Chronic Disease Registry (2020-21)



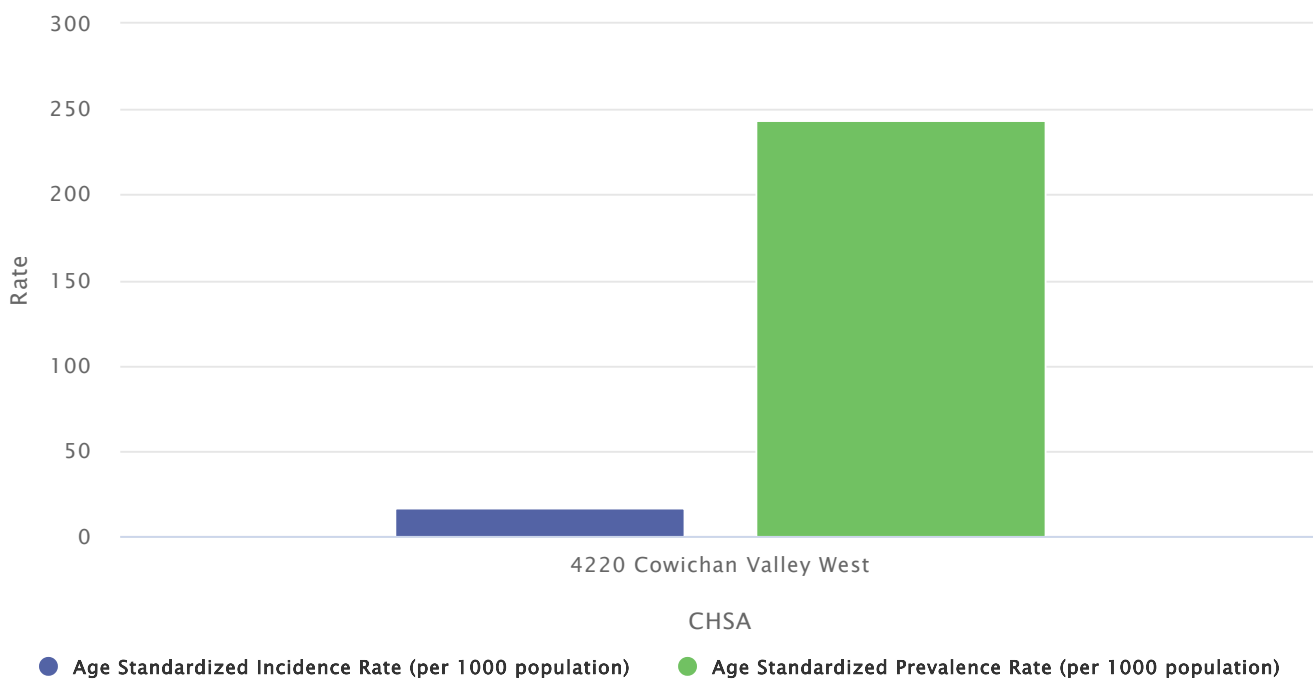
### Age-Standardized Incidence and Prevalence Rates of Hospitalized Stroke for all CHSAs in Cowichan Valley West (LHA)

B.C. Chronic Disease Registry (2020-21)



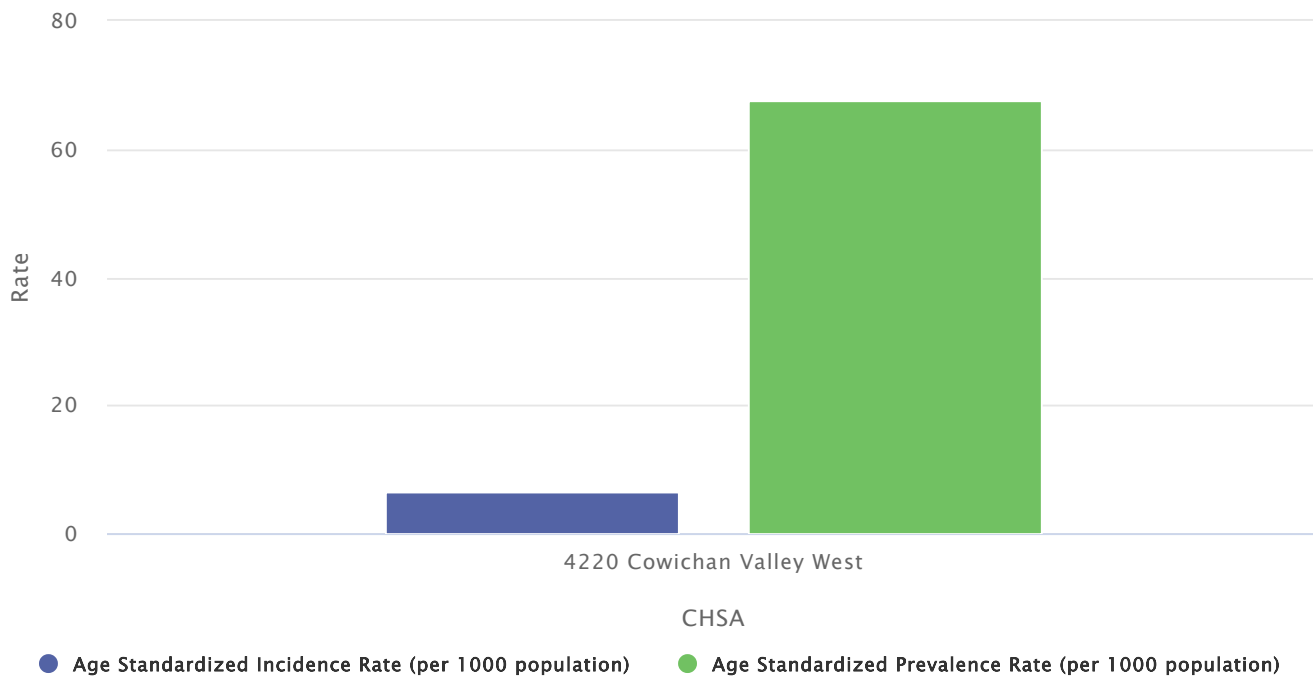
### Age-Standardized Incidence and Prevalence Rates of Hypertension for all CHSAs in Cowichan Valley West (LHA)

B.C. Chronic Disease Registry (2020-21)



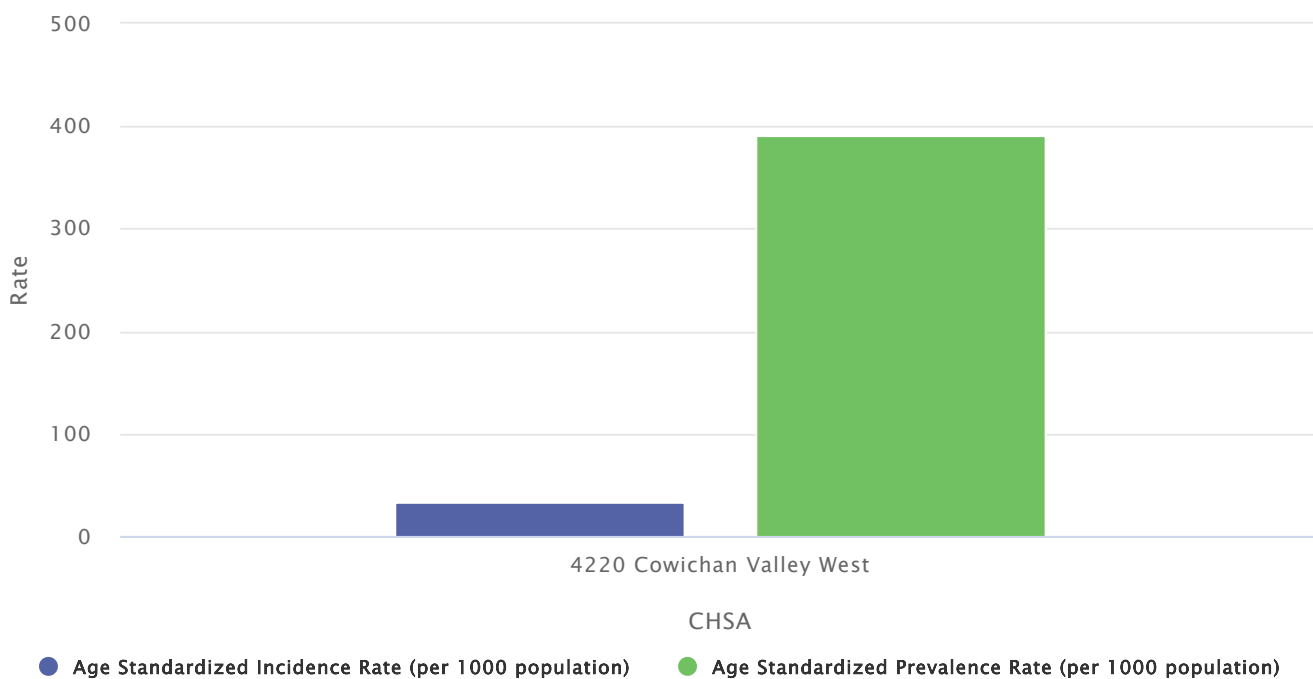
### Age-Standardized Incidence and Prevalence Rates of Ischemic Heart Disease for all CHSAs in Cowichan Valley West (LHA)

B.C. Chronic Disease Registry (2020-21)



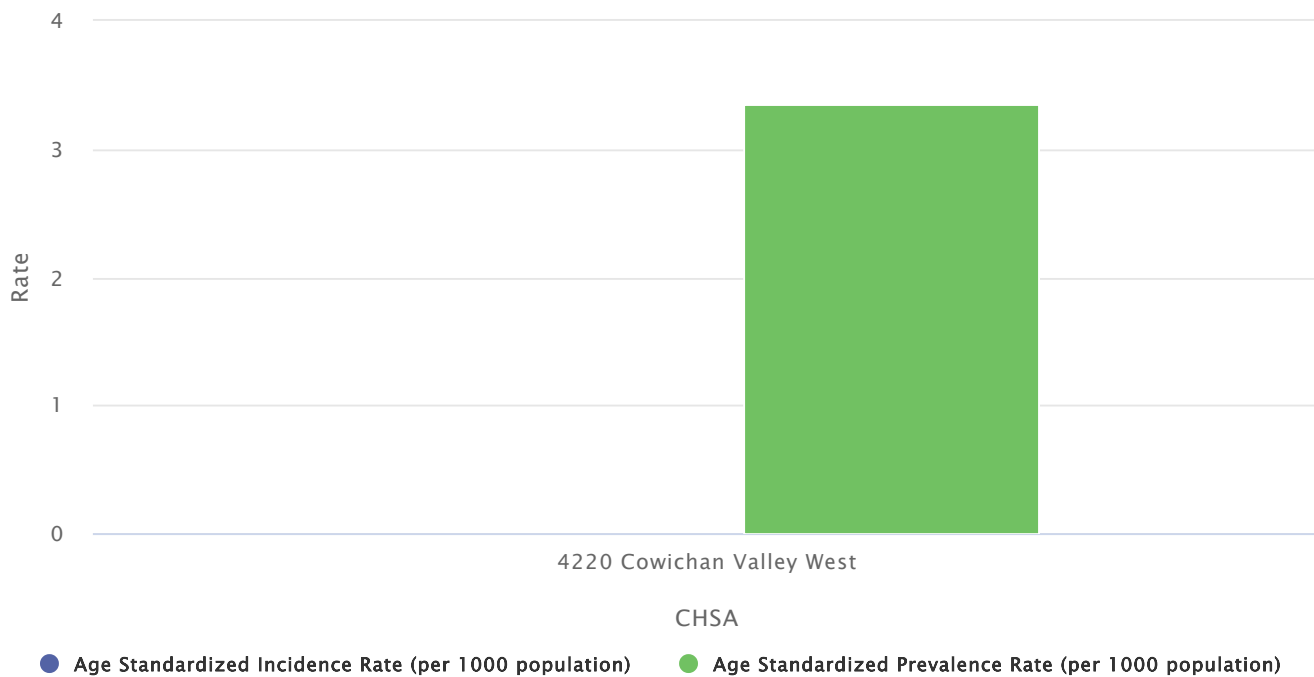
### Age-Standardized Incidence and Prevalence Rates of Mood and Anxiety Disorders for all CHSAs in Cowichan Valley West (LHA)

B.C. Chronic Disease Registry (2020-21)



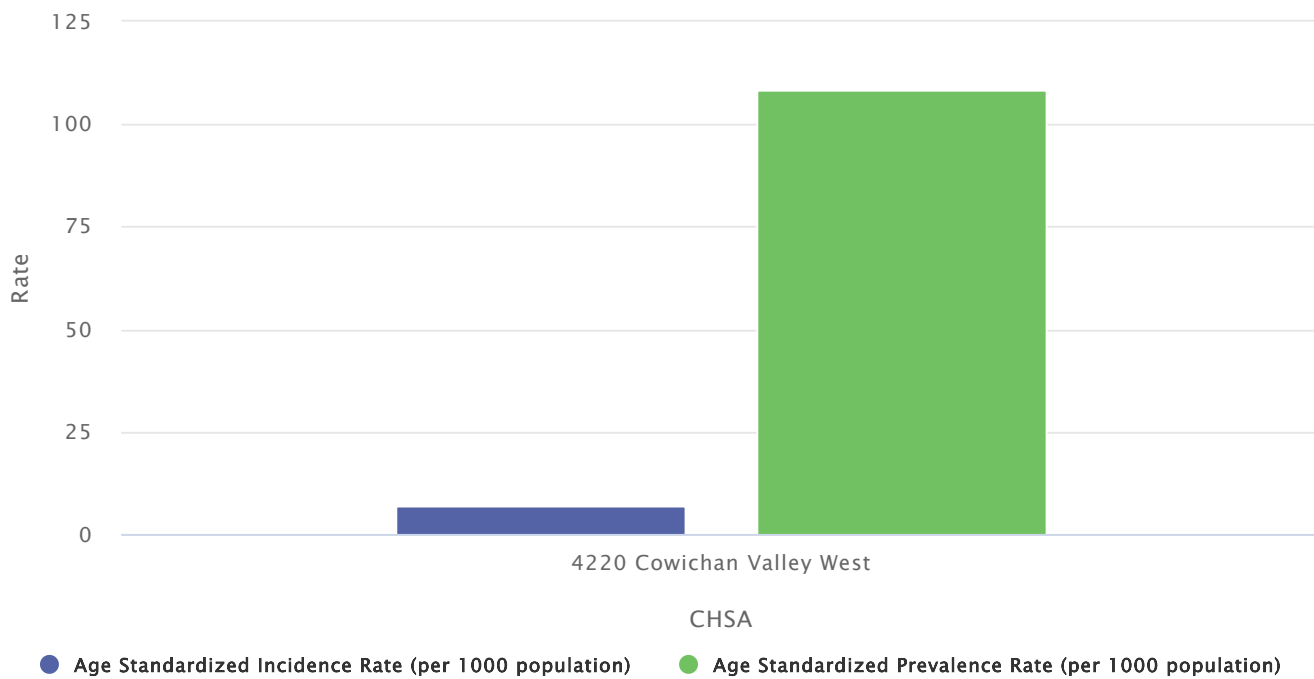
### Age-Standardized Incidence and Prevalence Rates of Multiple Sclerosis for all CHSAs in Cowichan Valley West (LHA)

B.C. Chronic Disease Registry (2020-21)



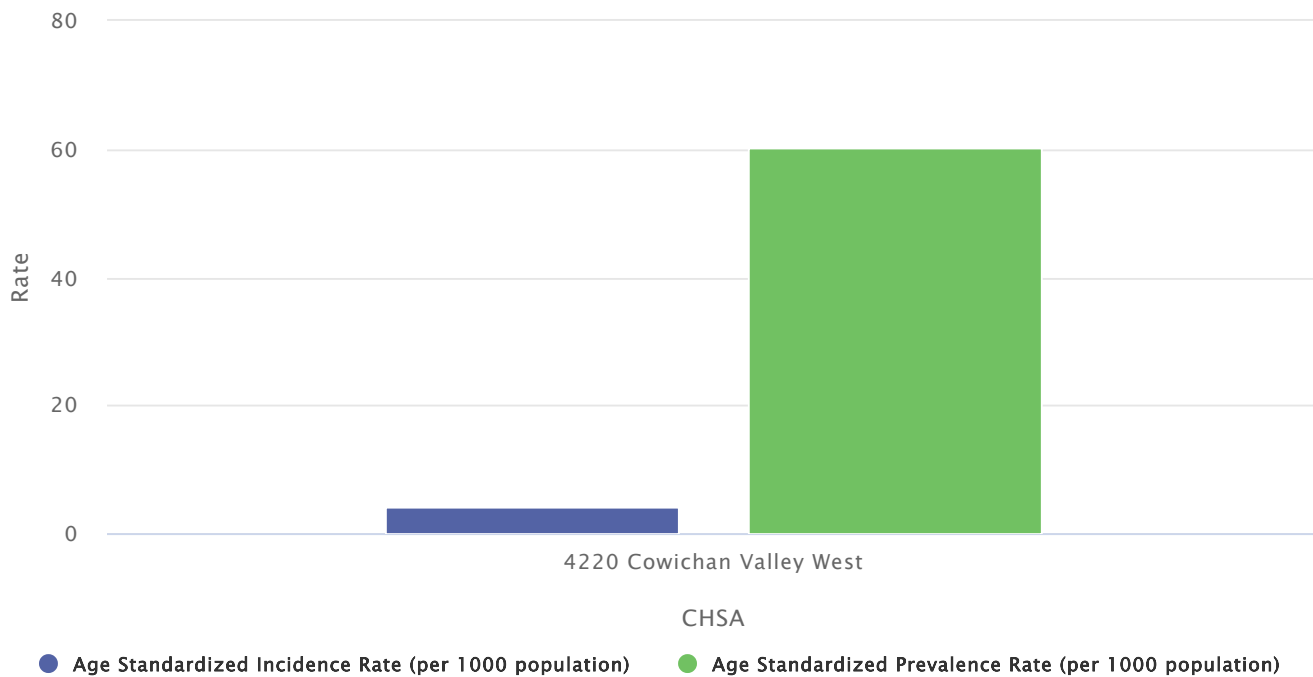
### Age-Standardized Incidence and Prevalence Rates of Osteoarthritis for all CHSAs in Cowichan Valley West (LHA)

B.C. Chronic Disease Registry (2020-21)



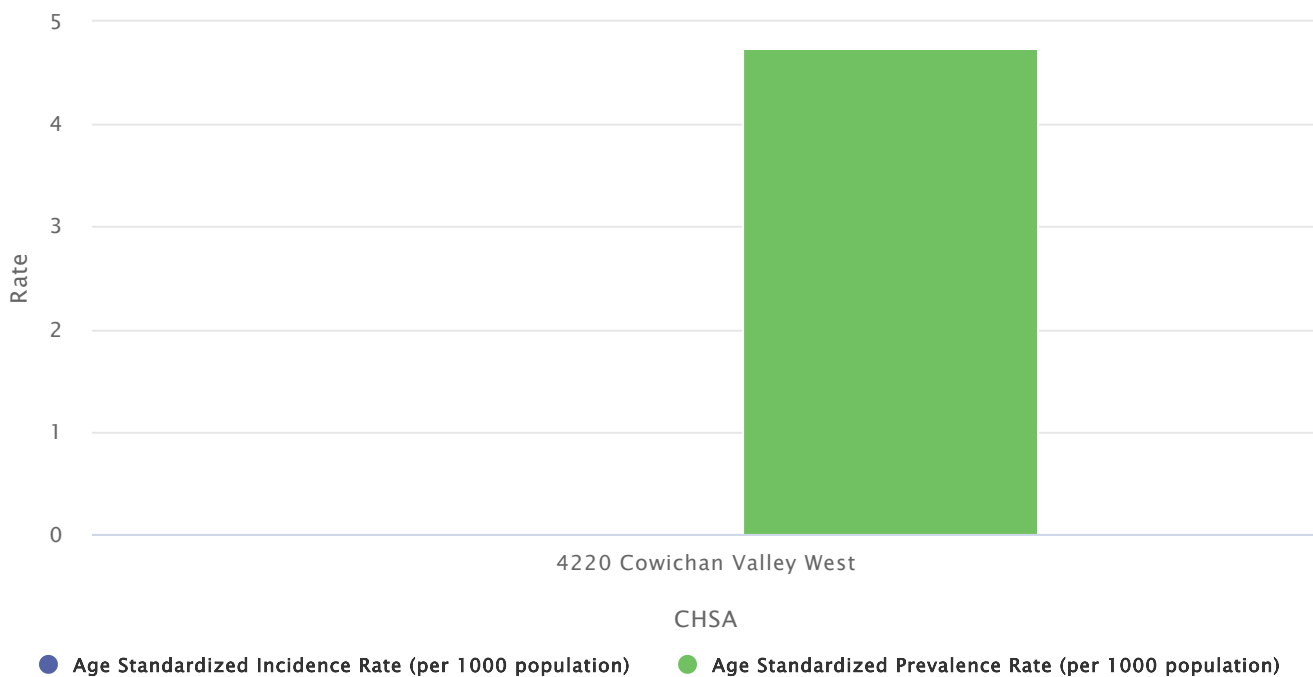
### Age-Standardized Incidence and Prevalence Rates of Osteoporosis for all CHSAs in Cowichan Valley West (LHA)

B.C. Chronic Disease Registry (2020-21)



### Age-Standardized Incidence and Prevalence Rates of Parkinsonism for all CHSAs in Cowichan Valley West (LHA)

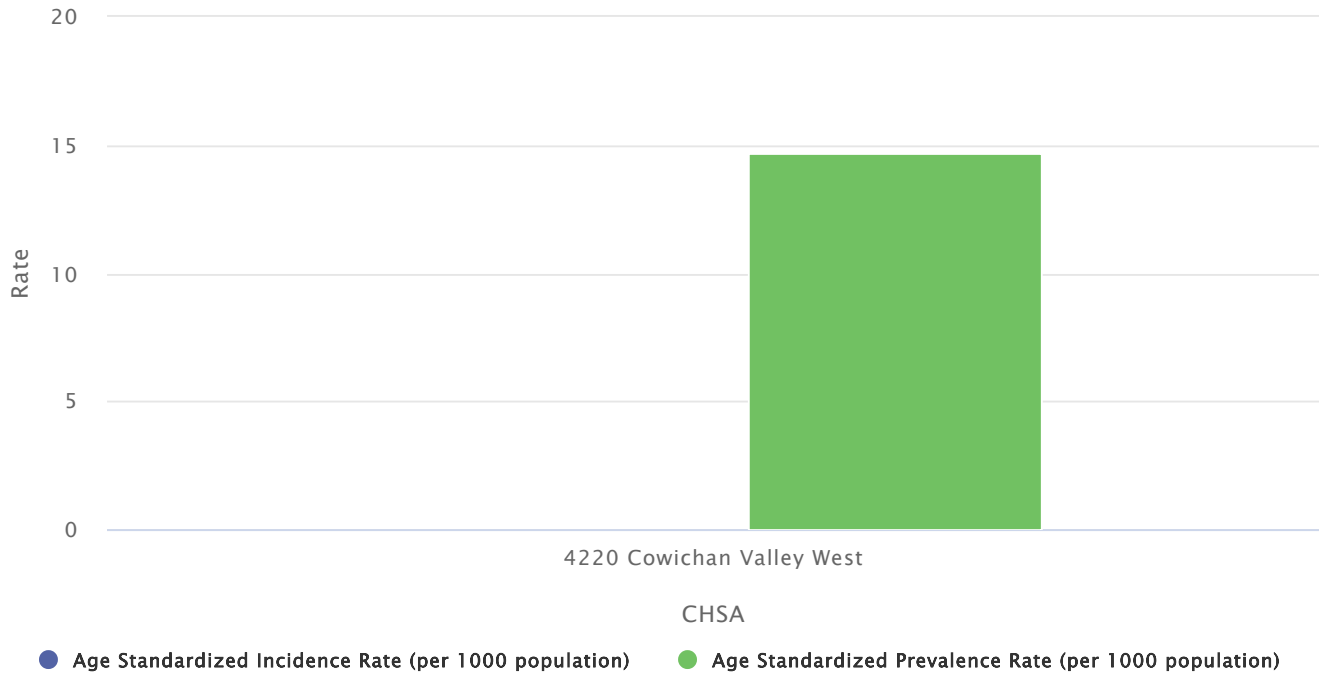
B.C. Chronic Disease Registry (2020-21)





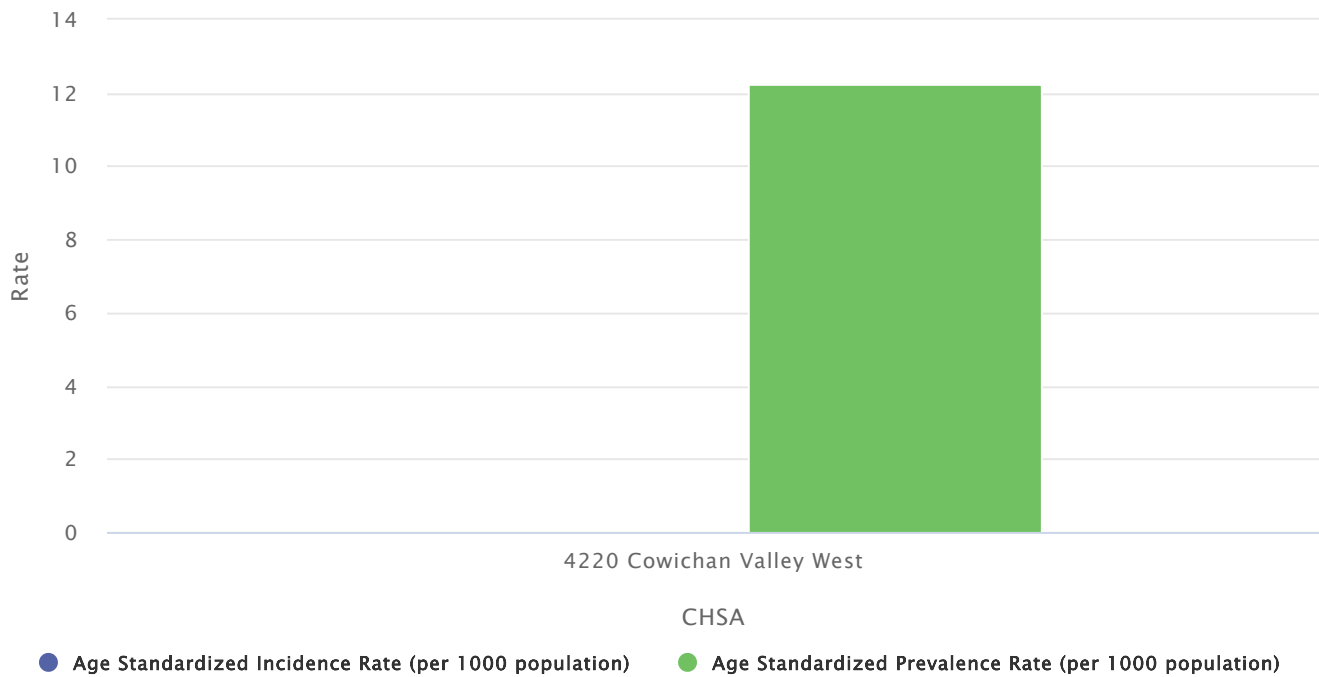
### Age-Standardized Incidence and Prevalence Rates of Rheumatoid Arthritis for all CHSAs in Cowichan Valley West (LHA)

B.C. Chronic Disease Registry (2020-21)



### Age-Standardized Incidence and Prevalence Rates of Schizophrenia and Delusional Disorders for all CHSAs in Cowichan Valley West (LHA)

B.C. Chronic Disease Registry (2020-21)



## Comparison to Provincial and Regional Health Authority Averages

### Comparison to provincial and regional health authority averages – Chronic diseases

The following chart compares the CHSA's age-standardized incidence and lifetime prevalence rates for various chronic diseases with the provincial (BC) and corresponding regional health authority's (HA) rates. A negative value indicates that the CHSA rate is lower than the provincial or regional health authority rate while a positive value indicates that it is higher.

Condition	Annual Age-standardized incidence rate (per 1000 population)			Percent Difference of CHSA Value	
	CHSA	HA	BC	Compared to HA	Compared to BC
Acute Myocardial Infarction	2.2	1.8	1.8	+23.4%	+26.9%
Alzheimer's Disease & Other Dementia	5.3	5.3	4.9	-1.3%	+6.9%
Asthma	8.8	5.5	4.9	+60.8%	+78.7%
Chronic Kidney Disease	7.9	5.1	5.5	+55.4%	+43.9%
Chronic Obstructive Pulmonary Disease	10.2	4.6	4.6	+119.2%	+121.7%
Depression	18.1	19.4	16.1	-6.6%	+12.3%
Diabetes	7.4	5.6	7.1	+31.4%	+3.9%
Epilepsy	1.0	0.7	0.7	+42.4%	+54.1%
Gout	3.0	2.4	2.7	+27.9%	+11.8%
Heart Failure	3.0	3.5	3.4	-14.8%	-13.3%
Hospitalized Stroke	1.6	1.2	1.3	+38.0%	+28.0%
Hypertension	16.4	15.6	16.2	+5.2%	+1.2%
Ischemic Heart Disease	6.5	8.2	7.7	-20.7%	-15.3%
Mood & Anxiety Disorders	33.7	29.4	24.4	+14.5%	+38.1%
Multiple Sclerosis	*	0.2	0.2	-	-
Osteoarthritis	7.0	7.7	7.0	-8.6%	-0.5%
Osteoporosis	4.2	5.4	5.9	-22.3%	-29.6%
Parkinsonism	*	0.6	0.6	-	-
Rheumatoid Arthritis	*	0.7	0.9	-	-
Schizophrenia & Delusional Disorders	*	0.8	0.7	-	-

An asterisk (\*) in the table indicates data for this CHSA is not publicly releasable

Please note that indicator values presented in this table have been rounded to one (1) decimal place while percent (%) differences of CHSA value compared to HA or BC values are calculated using unrounded indicator values.

- CHSA is ahead of the health authority (HA) or provincial (BC) average
- CHSA is behind the health authority (HA) or provincial (BC) average, signaling opportunity for improvement

Data source: B.C. Chronic Disease Registry, 2020-21.

Condition	Annual Age-standardized prevalence rate (per 1000 population)			Percent Difference of CHSA Value	
	CHSA	HA	BC	Compared to HA	Compared to BC
<b>Acute Myocardial Infarction</b>	21.9	17.7	18.2	+23.8%	+20.0%
<b>Alzheimer's Disease &amp; Other Dementia</b>	22.9	22.8	22.0	+0.3%	+4.0%
<b>Asthma</b>	141.5	135.5	126.9	+4.4%	+11.5%
<b>Chronic Kidney Disease</b>	37.8	33.1	34.9	+14.2%	+8.1%
<b>Chronic Obstructive Pulmonary Disease</b>	113.5	55.8	53.9	+103.5%	+110.4%
<b>Depression</b>	305.5	291.6	255.9	+4.8%	+19.4%
<b>Diabetes</b>	79.6	74.3	87.5	+7.2%	-9.0%
<b>Epilepsy</b>	16.0	10.8	9.6	+47.5%	+66.3%
<b>Gout</b>	39.4	28.1	32.6	+40.0%	+20.6%
<b>Heart Failure</b>	21.2	20.0	21.4	+6.3%	-0.9%
<b>Hospitalized Stroke</b>	11.8	8.4	9.4	+41.4%	+26.6%
<b>Hypertension</b>	243.8	221.7	236.2	+10.0%	+3.2%
<b>Ischemic Heart Disease</b>	67.6	68.9	76.1	-2.0%	-11.2%
<b>Mood &amp; Anxiety Disorders</b>	391.0	363.4	318.3	+7.6%	+22.8%
<b>Multiple Sclerosis</b>	3.4	3.6	2.9	-7.3%	+14.8%
<b>Osteoarthritis</b>	108.6	95.9	90.0	+13.3%	+20.7%
<b>Osteoporosis</b>	60.2	79.0	87.1	-23.9%	-30.9%
<b>Parkinsonism</b>	4.7	4.5	4.7	+5.6%	+1.3%
<b>Rheumatoid Arthritis</b>	14.7	11.5	12.4	+27.4%	+17.9%
<b>Schizophrenia &amp; Delusional Disorders</b>	12.2	12.4	11.7	-1.1%	+4.5%

An asterisk (\*) in the table indicates data for this CHSA is not publicly releasable

Please note that indicator values presented in this table have been rounded to one (1) decimal place while percent (%) differences of CHSA value compared to HA or BC values are calculated using unrounded indicator values.

- CHSA is ahead of the health authority (HA) or provincial (BC) average
- CHSA is behind the health authority (HA) or provincial (BC) average, signaling opportunity for improvement

Data source: B.C. Chronic Disease Registry, 2020-21.

## Comparison to provincial and regional health authority averages – All other indicators

The following chart compares the CHSA's values for all other indicators with the provincial (BC) and the corresponding regional health authority's (HA) averages. A negative value indicates that the CHSA value is lower than the provincial or health authority average while a positive value indicates that it is higher.

Indicator, age (year)	Indicator Value, %			Percent Difference of CHSA Value	
	CHSA	HA	BC	Compared to HA	Compared to BC
<b>Attached to GP or group practice, 0+</b>	76.3	77.5	76.8	-1.6%	-0.7%
<b>Community belonging - strong, 18+</b>	41.2	48.0	46.1	-14.2%	-10.6%
<b>General health - good, 18+</b>	82.5	88.9	89.4	-7.2%	-7.7%
<b>Physically active, 18+</b>	70.5	72.4	69.1	-2.6%	+2.0%
<b>Feeling lonely - always, 18+</b>	9.5	11.3	12.1	-15.9%	-21.5%
<b>Mental health - poor, 18+</b>	28.8	31.1	32.1	-7.4%	-10.3%
<b>Smoke/vape daily/occasionally, 18+</b>	18.2	14.3	13.7	+27.3%	+32.8%
<b>Binge drink, 18+</b>	27.6	27.8	27.1	-0.7%	+1.8%
<b>Small for Gestational Age, 0</b>	0.0	4.9	6.6	-100.0%	-100.0%
<b>Preterm Births, 0</b>	5.6	11.5	11.4	-51.3%	-50.9%
<b>Low birth weight singletons, 0</b>	0.0	4.2	4.7	-100.0%	-100.0%
<b>Cesarean Deliveries, 0+</b>	33.3	32.3	37.4	+3.1%	-11.0%

An asterisk (\*) in the table indicates data for this CHSA is not publicly releasable

Please note that indicator values presented in this table have been rounded to one (1) decimal place while percent (%) differences of CHSA value compared to HA or BC values are calculated using unrounded indicator values.

- CHSA is ahead of the health authority (HA) or provincial (BC) average
- CHSA is behind the health authority (HA) or provincial (BC) average, signaling opportunity for improvement

## Glossary

**Age-standardization:** An age-standardized rate is a rate that would have existed if the population had the same age distribution as the selected reference population. The Community Health Service Area (CHSA) health profiles uses the 2011 Canadian standard population weights provided by the BC Ministry of Health as the reference population. Chronic disease incidence and prevalence rates have been age-standardized using the direct standardization method with five-year age groups.

**Collective dwelling:** Refers to a dwelling of a commercial, institutional or communal nature. It may be identified by a sign on the premises or by an enumerator speaking with the person in charge, a resident, a neighbour, etc. Included are lodging or rooming houses, hotels, motels, tourist establishments, nursing homes, hospitals, staff residences, military bases, work camps, jails, group homes, and so on.

**Crude rates:** These rates represent the number of cases in a specific geographic region divided by the population or population-at-risk in that region. Crude rates represent the burden of disease in the population and are not adjusted to the standard population.

**Incidence:** The number of people newly diagnosed with a condition in a population during a specific time period is called the incidence. Incidence is often presented as a rate – the number of people who get sick with a disease or condition divided by the number of people at risk of getting sick in a specified time frame.

**Prevalence:** The total number of people living with a condition in a population during a specific time period is called the prevalence. Prevalence differs from incidence in that it includes people who have been living with the condition for one or more years. Prevalence is often presented as a rate – the number of people living with a condition divided by the total population in a specified time frame.

**Primary Care Network:** A Primary Care Network (PCN) consists of a network of clinicians from multiple medical disciplines engaged in team-based practice. PCNs act as a hub to connect healthcare providers, streamline referrals, and provide better support for health practitioners. PCNs are part of the BC Ministry of Health's vision for a more integrated and effective primary care system in B.C.

**Primary Care Network community:** A PCN community is composed of one or more PCNs that provide services to a geographic region. These geographic regions are amalgamations of CHSAs.

**Recent immigrant:** Immigrant refers to a person who is or has ever been a landed immigrant or permanent resident in Canada. In the CHSA health profiles, recent immigrants are individuals who, at the time of the Canadian Census 2016 (May 10th), had immigrated to Canada within the past five years.

**Refugee:** Refugees are immigrants who were granted permanent resident status because they can no longer return to their home country for fear of persecution due to their race, religion, nationality, social group membership or political opinion. Refugee can also refer to individuals who have been affected by civil war or armed conflict or have suffered a serious human rights violation and are resettling in Canada.

**Underemployment:** Underemployment is defined as the condition in which the hours of work of an employed person are insufficient in relation to an alternative employment situation in which the person is willing and available to engage. This includes the share of part-time workers who would prefer to be working full-time.<sup>[56]</sup>

## Data Sources

BC Cancer. (2022). BC Cancer Registry, 2016-2020.

BC Centre for Disease Control. (2021). BC COVID-19 SPEAK Round 1 (2020) and Round 2 (2021) Surveys.

BC Centre for Disease Control. (2022). BC's Index of Multiple Deprivation for Community Health Service Areas.

B.C. Ministry of Health. (2021). Chronic Disease Registry, 2020/21.

B.C. Ministry of Health. (2021). Attachment to primary care provider by CHSA, 2020/21.

Perinatal Services BC. British Columbia Perinatal Data Registry. Years Provided: 01/01/2020 to 31/12/2020. Resource Type: Tabulated Data. Data Provided on May 26, 2022.

BC Stats. (2021). Population Projections, Years 2021-2041.

McGill University. (2019). Canadian Active Living Environments, 2016. Retrieved from <https://nancyrossresearchgroup.ca>.

Statistics Canada. (2018). 2016 Census of Population. Statistics Canada Catalogue no. 98-316-X201001.

## References

1. National Academies of Sciences, Engineering, and Medicine; Health and Medicine Division; Board on Population Health and Public Health Practice; Committee on Community-Based Solutions to Promote Health Equity in the United States. (2017, January 11). *Communities in Action: Pathways to Health Equity*. Baciú, A., Negussie, Y., Geller, A., & Weinstein, J. N. (Eds.). Washington (DC): National Academies Press (US).
2. Statistics Canada. (2012). Household. Retrieved from: <https://www23.statcan.gc.ca/imdb/p3Var.pl?Function=Unit&Id=96113>
3. Robards, J., Evandrou, M., Falkingham, J., & Vlachantoni, A. (2012). Marital status, health and mortality. *Maturitas*, 73(4), 295-299. <https://doi.org/10.1016/j.maturitas.2012.08.007>
4. Canada Mortgage and Housing Corporation. Housing in Canada online: Definitions of variables. Retrieved from: [https://cmhc.beyond2020.com/HiCODefinitions\\_EN.html](https://cmhc.beyond2020.com/HiCODefinitions_EN.html)
5. Statistics Canada. (2017, August 31). Release and Concepts Overview, 2016 Census of Population. Retrieved from Statistics Canada: <https://www12.statcan.gc.ca/census-recensement/2016/ref/98-501/98-501-x2016007-eng.cfm>
6. Waterston, S., Grueger, B., & Samson, L. (2015). Housing need in Canada: Healthy lives start at home. *Paediatrics and Child Health*, 20(7), 403-407. <https://doi.org/10.1093/pch/20.7.403>
7. Braveman, P., & Gottlieb, L. (2014). The social determinants of health: it's time to consider the causes of the causes. *Public health reports (Washington, D.C. : 1974)*, 129(Suppl 2), 19–31. <https://doi.org/10.1177/003335491412915206>
8. Canadian Mental Health Association British Columbia Division. (2014). Housing. Vancouver, BC. Retrieved from <https://cmha.bc.ca/documents/housing/>
9. Berkman, L. F., Glass, T., Brissette, I., & Seeman, T. E. (2000). From social integration to health: Durkheim in the new millennium. *Social science & medicine*, 51(6), 843–857. [https://doi.org/10.1016/s0277-9536\(00\)00065-4](https://doi.org/10.1016/s0277-9536(00)00065-4)
10. Ross, N. (2002). Community belonging and health. *Health Reports*, 13(3), 33-39. Retrieved from <https://www150.statcan.gc.ca/n1/en/pub/82-003-x/2001003/article/6105-eng.pdf?st=xdMn9Ovi>
11. Shields, M. (2008). Community belonging and self-perceived health. *Health Reports*, 19(2), 51-60. Retrieved from <https://www150.statcan.gc.ca/n1/en/pub/82-003-x/2008002/article/10552-eng.pdf?st=uMcUjK>
12. Hajek, A., Kretzler, B., & König, H.-H. (2020). Multimorbidity, Loneliness, and Social Isolation. A Systematic Review. *International Journal of Environmental Research and Public Health*, 17(22), 8688. <https://doi.org/10.3390/ijerph17228688>
13. Leigh-Hunt, N., Bagguley, D., Bash, K., Turner, V., Turnbull, S., Valtorta, N., & Caan, W. (2017). An overview of systematic reviews on the public health consequences of social isolation and loneliness. *Public health*, 152, 157–171. <https://doi.org/10.1016/j.puhe.2017.07.035>
14. Zhang, R., & Rasali, D. (2015). Life expectancy ranking of Canadians among the populations in selected OECD countries and its disparities among British Columbians. *Archives of Public Health*, 73(1), 1–10. <https://doi.org/10.1186/s13690-015-0065-0>
15. Pinault, L., Christidis, T., Toyib, O., & Crouse, D. L. (2021). Ethnocultural and socioeconomic disparities in exposure to residential greenness within urban Canada. *Health reports*, 32(5), 3–14. <https://www.doi.org/10.25318/82-003-x202100500001-eng>

16. Firth, C. L., Thierry, B., Daniel, F., Meghan, W., & Kestens, Y. (2021). Gentrification, Urban Interventions and Equity (GENUINE): A map-based gentrification tool for Canadian metropolitan areas. *Health reports*, 32(5), 15–28. <https://www.doi.org/10.25318/82-003-x202100500002-eng>
17. Relova, S., Joffres, Y., Rasali, D., Zhang, R. L., McKee, G., & Janjua, N. (2022). British Columbia’s Index of Multiple Deprivation for Community Health Service Areas. *Data*, 7(2), 24. <https://doi.org/10.3390/data7020024>
18. Ross, N., Wasfi, R., Herrmann, T., & Gleckner, W. (2019). Canadian Active Living Environments Database (Can-ALE): User Manual & Technical Document. Retrieved from [http://canue.ca/wp-content/uploads/2018/03/CanALE\\_UserGuide.pdf](http://canue.ca/wp-content/uploads/2018/03/CanALE_UserGuide.pdf)
19. World Health Organization. (2021). Climate change and health. Retrieved from <https://www.who.int/news-room/fact-sheets/detail/climate-change-and-health>
20. Government of Canada. (n.d.). Risks of vaping. Retrieved from Health Canada: <https://www.canada.ca/en/health-canada/services/smoking-tobacco/vaping/risks.html#:~:text=Vaping%20can%20increase%20your%20exposure,potential%20to%20promote%20to%20bacco%20use.>
21. Government of British Columbia. (n.d.). British Columbians who smoke (Age 12+). Retrieved from Healthideas Metaspace: <https://meta.healthideas.gov.bc.ca/indicators/british-columbians-who-smoke-age-12>
22. Government of Canada. (n.d.). Physical Activity and your health. Retrieved from Health Canada: <https://www.canada.ca/en/public-health/services/being-active/physical-activity-your-health.html>
23. World Health Organization. (2020). Physical activity. Retrieved from <https://www.who.int/news-room/fact-sheets/detail/physical-activity>
24. Tsai, J., Ford, S. E., Li, C., Pearson, W. S., & Zhao, G. (2010). Binge Drinking and Suboptimal Self-Rated Health Among Adult Drinkers. *Alcoholism, clinical and experimental research*, 34(8), 1465–1471. <https://doi.org/10.1111/j.1530-0277.2010.01231.x>
25. Piano, M. R., Mazzuco, A., Kang, M., & Phillips, S. A. (2017). Cardiovascular Consequences of Binge Drinking: An Integrative Review with Implications for Advocacy, Policy, and Research. *Alcoholism, clinical and experimental research*, 41(3), 487–496. <https://doi.org/10.1111/acer.13329>
26. Im, P. K., Millwood, I. Y., Kartsonaki, C., Guo, Y., Chen, Y., Turnbull, I., Yu, C., Du, H., Pei, P., Lv, J., Walters, R. G., Li, L., Yang, L., Chen, Z., & China Kadoorie Biobank (CKB) collaborative group. (2021). Alcohol drinking and risks of liver cancer and non-neoplastic chronic liver diseases in China: a 10-year prospective study of 0.5 million adults. *BMC medicine*, 19(1), 216. <https://doi.org/10.1186/s12916-021-02079-1>
27. Falk, D. E., Yi, H. Y., & Hiller-Sturmhöfel, S. (2006). An epidemiologic analysis of co-occurring alcohol and tobacco use and disorders: findings from the National Epidemiologic Survey on Alcohol and Related Conditions. *Alcohol research & health*, 29(3), 162–171.
28. Kranzler, H. R., & Rosenthal, R. N. (2003). Dual diagnosis: alcoholism and co-morbid psychiatric disorders. *The American journal on addictions*, 12(s1), s26–s40. <https://doi.org/10.1111/j.1521-0391.2003.tb00494.x>
29. Tsai, J., Floyd, R. L., & O’Connor, M. J. (2008). Paradigms for alcohol use and co-occurring behavioral health risk factors among women of childbearing age. In K. I. DiGuarde, & K. I. DiGuarde (Ed.), *Binge Drinking Research Progress* (pp. 87–100). Hauppauge, NY: Nova Science Publishers, Inc.
30. GBD 2020 Alcohol Collaborators. (2022). Population-level risks of alcohol consumption by amount, geography, age, sex, and year: a systematic analysis for the Global Burden of Disease Study 2020. *Lancet*, 400(10347), 185–235. [https://doi.org/10.1016/S0140-6736\(22\)00847-9](https://doi.org/10.1016/S0140-6736(22)00847-9)
31. Chikritzhs, T., Livingston, M. Alcohol and the Risk of Injury. *Nutrients* 2021, 13, 2777. <https://doi.org/10.3390/nu13082777>
32. Canadian Society for Exercise Physiology (CSEP). (2020). Canadian 24-Hour Movement Guidelines for Adults (Aged 18–64 Years). Retrieved from: <http://csepguidelines.ca/>
33. Davy, A., Endres, N.K., Johnson, R.J., Shealy, J.E. (2019). Alpine Skiing Injuries. *Sports Health*. 11(1):18-26. doi: 10.1177/1941738118813051.

34. Emery, C.A., Black, A.M., Kolstad, A., Martinez, G., Nettel-Aguirre, A., Engebretsen, L., Johnston, K., Kissick, J., Maddocks, D., Tator, C., Aubry, M., Dvořák, J., Nagahiro, S., Schneider, K. What strategies can be used to effectively reduce the risk of concussion in sport? A systematic review. *Br J Sports Med.* 2017 Jun;51(12):978-984. doi: 10.1136/bjsports-2016-097452.
35. Olivier, J., Creighton, P. Bicycle injuries and helmet use: a systematic review and meta-analysis. *Int J Epidemiol.* 2017 Feb 1;46(1):278-292. doi: 10.1093/ije/dyw153. Erratum in: *Int J Epidemiol.* 2017 Feb 1;46(1):372.
36. Viauroux, C., Gungor, A. An Empirical Analysis of Life Jacket Effectiveness in Recreational Boating. *Risk Anal.* 2016 Feb;36(2):302-19. doi: 10.1111/risa.12449.
37. Fouda Mbarga, N., Abubakari, AR., Aminde, L.N. et al. Seatbelt use and risk of major injuries sustained by vehicle occupants during motor-vehicle crashes: a systematic review and meta-analysis of cohort studies. *BMC Public Health* 18, 1413 (2018). <https://doi.org/10.1186/s12889-018-6280-1>.
38. Smithman, M. A. (2018). Area deprivation and attachment to a general practitioner through centralized waiting lists: a cross-sectional study in Quebec, Canada. *International Journal for Equity in Health*, 17(1), 176. <https://doi.org/10.1186/s12939-018-0887-9>
39. Roy, A. B. (2016). Providing continuity of care to a specific population: Attracting new family physicians. *Canadian family physician*, 62(5), e256–e262.
40. Maarsingh, O. R. (2016). Continuity of care in primary care and association with survival in older people: a 17-year prospective cohort study. *The British journal of general practice: the journal of the Royal College of General Practitioners*, 66(649), e531–e539. <https://doi.org/10.3399/bjgp16X686101>
41. Frederiksen, H. B.-L. (2010). Attachment in the doctor-patient relationship in general practice: a qualitative study. *Scandinavian journal of primary health care*, 28(3), 185–190. <https://doi.org/10.3109/02813432.2010.505447>
42. Brenk-Franz, K. S. (2017). Patient-provider relationship as mediator between adult attachment and self-management in primary care patients with multiple chronic conditions. *Journal of psychosomatic research*, 97, 131–135. <https://doi.org/10.1016/j.jpsychores.2017.04.007>
43. McRae, I. Y. (2011). Patient affiliation with GPs in Australia--who is and who is not and does it matter? *Health policy (Amsterdam, Netherlands)*, 103(1), 16–23. <https://doi.org/10.1016/j.healthpol.2010.09.002>
44. Crooks, V. A. (2012). Chronically ill Canadians' experiences of being unattached to a family doctor: A qualitative study of marginalized patients in British Columbia. *BMC Family Practice*, 13, 69. <https://doi.org/10.1186/1471-2296-13-69>
45. British Columbia Ministry of Health. (2020, September 15). Transforming primary care in B.C. Retrieved from Government of British Columbia: <https://news.gov.bc.ca/releases/2020HLTH0280-001735>
46. Shields, M., & Shooshtari, S. (2001). Determinants of self-perceived health. *Health Reports*, 13(1), 35-52. Retrieved from <https://www150.statcan.gc.ca/n1/en/pub/82-003-x/2001001/article/6023-eng.pdf?st=1vZpj7ji>
47. Statistics Canada. (2010, January 11). Healthy People, Healthy Places. Retrieved from [https://publications.gc.ca/collections/collection\\_2018/statcan/82-229-x/82-229-x2009001-eng.pdf](https://publications.gc.ca/collections/collection_2018/statcan/82-229-x/82-229-x2009001-eng.pdf)
48. World Health Organization. (2004). Promoting Mental Health. Concepts. Emerging Evidence. Practice. Retrieved from World Health Organization: <https://apps.who.int/iris/bitstream/handle/10665/42940/9241591595.pdf>
49. British Columbia Ministry of Health. (2013). Promote, Protect, Prevent: Our Health Begins Here: BC's Guiding Framework for Public Health. British Columbia Ministry of Health. Retrieved from <https://www.health.gov.bc.ca/library/publications/year/2013/BC-guiding-framework-for-public-health.pdf>
50. Government of Canada. (2011). The Well-Being of Canada's Young Children. Retrieved from [https://publications.gc.ca/collections/collection\\_2012/rhdcc-hrsdc/HS1-7-2012-eng.pdf](https://publications.gc.ca/collections/collection_2012/rhdcc-hrsdc/HS1-7-2012-eng.pdf)
51. BC Injury Prevention Committee (BCIPC) Provincial Injury Prevention Priorities. [(accessed on 9 January 2023)]. Available online: <http://www.bccdc.ca/pop-public-health/Documents/bcipc-provincial-injury-prevention-priorities-2017.pdf>



52. Oakey, M., Evans, D.C., Copley, T.T., Karbakhsh, M., Samarakkody, D., Brubacher, J.R., Pauer, S., Zheng, A., Rajabali, F., Fyfe, M., Pike, I. Development of Policy-Relevant Indicators for Injury Prevention in British Columbia by the Key Decision-Makers. *Int J Environ Res Public Health*. 2021 Nov 11;18(22):11837. doi: 10.3390/ijerph182211837.
53. Poirier, A. E., Ruan, Y., Volesky, K. D., King, W. D., O'Sullivan, D. E., Gogna, P., Walter, S. D., Villeneuve, P. J., Friedenreich, C. M., Brenner, D. R., & ComPARE Study Team. (2019). The current and future burden of cancer attributable to modifiable risk factors in Canada: Summary of results. *Preventive medicine*, 122, 140–147. <https://doi.org/10.1016/j.ypmed.2019.04.007>
54. World Health Organization. (2021, February 8). Musculoskeletal conditions. Retrieved from World Health Organization: <https://www.who.int/news-room/fact-sheets/detail/musculoskeletal-conditions>
55. World Health Organization. (2021, November 10). Diabetes. Retrieved from World Health Organization: <https://www.who.int/news-room/fact-sheets/detail/diabetes>
56. Organization for Economic Co-operation and Development (OECD). (2002, May 2). Time related underemployment: definition. Retrieved from: <https://stats.oecd.org/glossary/detail.asp?ID=3542>

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These profiles will help inform healthcare partners, public health partners, local governments and community organizations on the health and well-being of their communities. As such, the profiles will continue to be updated as data and resources become available to address the changing needs of the communities. Thank you to all of our partners who have contributed to the development of these profiles.

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