Local Health Area Profiles Interpretation Guide 2019

Prepared by Planning
Island Health
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This Interpretation Guide is intended to be read with the LHA Profiles.

These profiles are not intended to be used for detailed planning or analysis. As they are updated on an annual basis, there may be more current data available. If you are intending to use these profiles for health planning purposes, or if you have questions or notice a discrepancy, please contact Maritia.Gully@viha.ca or planning@viha.ca

Please note: This Guide accompanies the 2019 profiles.

These profiles are intended to shed some light on community health including the many factors that contribute to and detract from health, such as economic status, child development, education, housing, justice, social support, and health services. Successful improvements in health can only come about with the involvement of an entire community. Partnership of community organizations, all levels of government, and community members is essential. Island Health can be a participant in such partnerships, but does not necessarily play a primary role in addressing these issues.

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Overview

This guide was created to accompany the Local Health Area (LHA) Profiles prepared by Island Health's Planning Department. These profiles are intended to provide an overview of the health status and an insight into the health needs of Island Health's LHAs.

Format

This guide follows a similar format to the LHA profiles. Each group of indicators is provided with a header explaining the overall health significance of those indicators. The indicators themselves are presented in table form where applicable, with a definition of the term drawn from the data source, an interpretation given to show the significance of the indicator to individual or community health status, and the source of the definition with a link to the appropriate webpage.

Each interpretation is also provided with a **high** and **low** aid. Where possible, statistics in the LHA profile are provided in comparison to the Island Health and British Columbia (BC) averages. The high/low aids are intended to indicate what the direction of variance means for a specific indicator in comparison to the Island Health and BC averages.

Examples: "**High**: Children are more vulnerable" indicates that if the levels of the LHA are higher than Island Health/BC averages, children in that area are more vulnerable than those in Island Health/BC. "**Low**: Fewer people are receiving employment insurance" indicates that if the levels of the LHA are lower than the Island Health/BC average, fewer people in that area are receiving employment insurance than the Island Health/BC average. Depending on the indicator, high and low can be reversed: i.e., high can be good (such as labour force participation rate) or bad (childhood vulnerability).

Terms that are underlined are defined in the glossary at the end of this document.

Some indicators measure health status, while others measure the vulnerability of individuals and/or populations. Although vulnerable populations will not necessarily have more health problems, when they do, they are more likely to experience a greater impact.

1   Highlights

This section contains the highlights from individual indicator groups. It is intended to give a quick and convenient overview of some of the most pertinent statistics for the LHA.

2   Geography

Island Health provides care to a diverse geographic range covering the entirety of Vancouver Island, the Gulf Islands, the Discovery Islands, and a portion of the mainland from north of Powell River to south of Rivers Inlet. The communities it provides service to range from urban centres like Victoria and Nanaimo to rural/remote areas such as Kingcome, Gilford, and Tahsis. It is well known that there is a connection between geographic location and health status: those living in rural locations often fare more poorly in health status than those in urban areas.[1]

In order to facilitate health care planning and delivery, Island Health is divided into 14 LHAs (Figure 1).

2.1   Location Description

Describes where the LHA is located, its size, and the communities it contains.

2.2   Transportation

According to the Canadian Institute for Health Information (CIHI), "Access to prevention, early detection, treatment or support services… make good health status even more difficult to achieve in rural or remote areas… People living in rural communities generally need to travel longer distances, and often on more dangerous roads, for work, shopping and other reasons."[2]

Figure 1: Island Health by Geography and Local Health Area
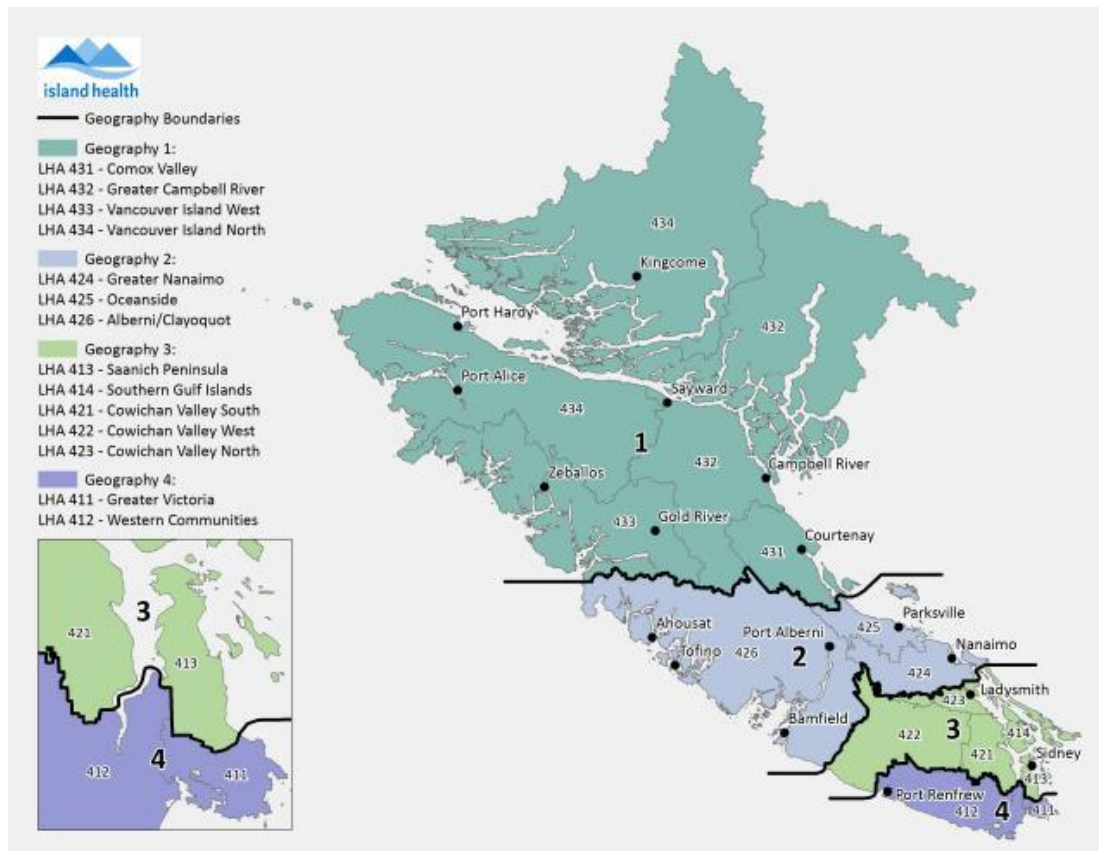
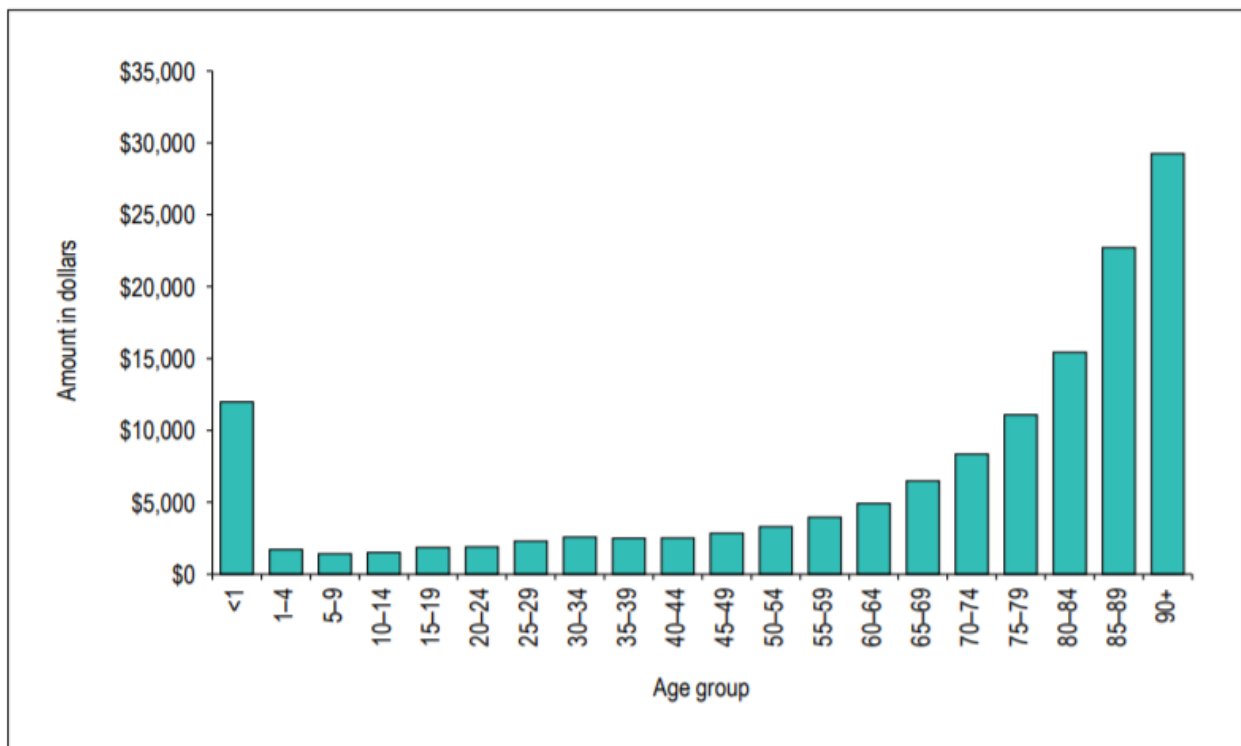# 3 Population and Demographics

Demographics are often the first indicators to consider when evaluating a population and their health needs. The changing characteristics of a population, such as age and size, have a considerable impact on its health needs. A community with an elderly population, for example, will likely require more health care services overall relative to a community of similar size with a younger population.

As people grow older, they tend to require more health services. On average, the need and the cost of these services rise dramatically with age (Figure 2). Demographic profiles are one of the tools used to plan health care services.

Those LHAs with relatively small populations are potentially affected by the "small number" problem. Due to the small denominator, even minor changes in the numerator can appear more significant than they may be. For example, one or two infant deaths in a small community will result in a higher infant mortality rate compared to a larger community, which experiences more deaths. Similarly, an increase of one death in the small community from one year to the next could raise the mortality rate significantly.

Also of note, changing data definitions may result in an apparently significant change between reports from two different years. As far as possible, the profiles will attempt to flag where data definitions have changed between the latest profile and previous ones.

Figure 2: Provincial/Territorial Government Health Expenditure per Capita by Age Group, Canada, 2016[3]

As well as the overall demographic trends, it is also important that we consider subpopulations that may have different health and social needs.

Within Island Health, there are 60+ First Nations groups[4] distinct from one another in relation to their location and environment (urban, rural, and remote) with unique cultures, traditions, and language. Indigenous people

experience gaps in their health outcomes resulting from a multitude of factors.[5] When considering Indigenous population data it is important to remember that "Aboriginal self-identification"[i] patterns and census participation have changed over time and may have caused an inaccurate representation of change in Indigenous populations.[6]

Support from families, friends, and communities is associated with better health. Such social support networks could be very important in helping people solve problems and deal with adversity, as well as maintaining a sense of mastery and control over life circumstances. The caring and respect that occurs in social relationships, and the resulting sense of satisfaction and well-being, seem to act as a buffer against health problems.[7] While social isolation tends to increase as people age, other factors play a role, including: poor health, disabilities, gender, loss of a spouse, living alone, reduced social networks, transportation barriers, place of residence, distrust of others, poverty, and low self-esteem. Factors affecting one person may not affect another in the same way. For instance, living alone does not necessarily mean someone is lonely or unsupported. Moreover, individuals who have fewer social contacts as they age may not necessarily feel dissatisfied or lonely. Research suggests that the quality of social contacts is more strongly associated with well-being than the quantity.[8]

3.1   Marital Status

| Term	Definition	Interpretation	Source
Widowed	Percent of population aged 15 and over that are widowed due to the death of a spouse.	Widowed individuals may face more vulnerability in times of illness or need. **High**: More widowed individuals **Low**: Fewer widowed individuals	Statistics Canada, Census 2016
Separated or Divorced	Percent of population aged 15 and over that are or were legally married but are separated or since divorced.	Separated or divorced individuals may face more vulnerability in times of illness or need. **High**: More separated or divorced individuals **Low**: Fewer separated or divorced individuals	Statistics Canada, Census 2016
Common-law	Percent of the population aged 15 and over that are in a common-law relationship. Usually considered as two people living together as though they were married.	Greater levels of social support may contribute to better health. **High**: More common-law relationships **Low**: Fewer common-law relationships	Statistics Canada, Census 2016
Married	Percent of population aged 15 and over that are legally married (not separated).	Greater levels of social support may contribute to better health. **High**: More married individuals **Low**: Fewer married individuals	Statistics Canada, Census 2016
Singles	Percent of population aged 15 and over that have never legally married.	Singles may be more vulnerable in times of illness and/or need. **High**: More single individuals **Low**: Fewer single individuals	Statistics Canada, Census 2016

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[i] Refers to those persons who self identified with at least one Aboriginal group (North American Indian, Métis or Inuit, and/or those who reported being a Treaty Indian or a Registered Indian, as defined by the Indian Act of Canada, and/or those who reported they were members of an Indian band or First Nation.

4   Social Determinants of Health

Access to adequate income, affordable housing, healthy food, education, early childhood development, healthy work environment, and recreational opportunities influence our ability to make healthy choices. Ultimately, these can influence the state of our physical and mental health, as well as life expectancy (Figure 3). In part, health inequities arise as the result of a concentration of risk factors within disadvantaged populations, including the social conditions in which people live and work.[9] Commonly, these determinants are grouped together as factors that contribute to socio-economic status (SES).

Relationships between social inequities and health outcomes are causal and bi-directional. Populations living in poorer social conditions generally have higher rates of chronic disease, and through periods of ill health, individuals with chronic disease can lose the security of adequate income and social supports.[10]

Figure 3: The Determinants of Health[11]

Source: Dahlgren and Whitehead, 1991
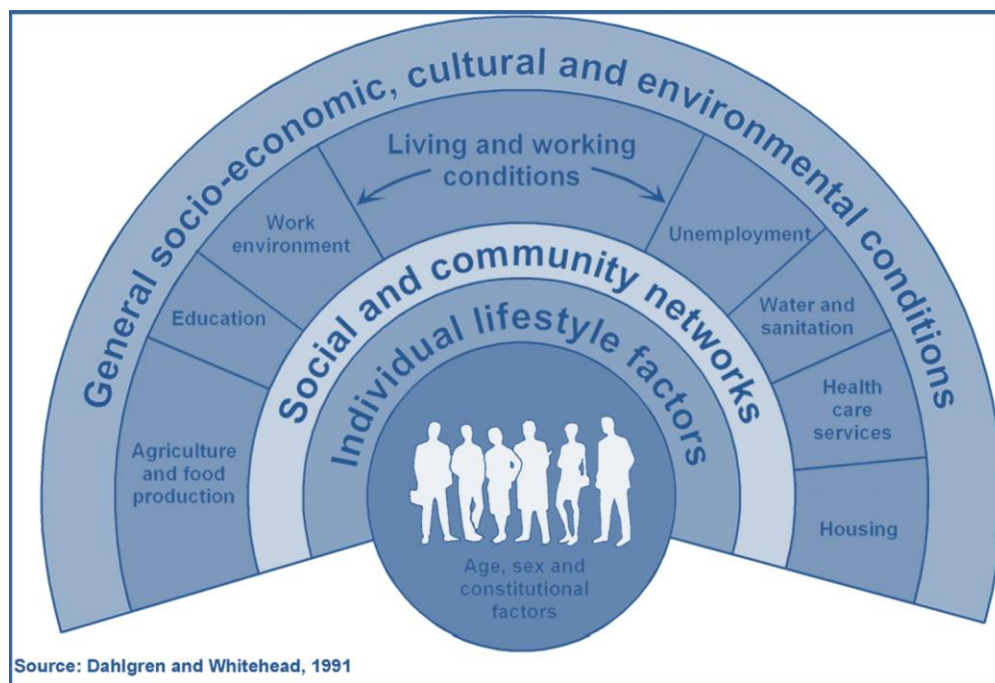
4.1   Income and Employment

Sufficient income improves access to adequate housing, nutritious foods, safe communities, participation in recreational, educational, and cultural opportunities, as well as other essentials for a healthy life. Inadequate income limits the security of these living conditions for individuals and families, where that insecurity can create tremendous stress that also contributes to ill health.[12] Income is one of the key factors affecting health vulnerability. In 2015, Canadians in the bottom four income-groups were more likely to have higher indicator rates than those in the highest income group, indicating poorer health outcomes and opportunities to bridge health inequalities.[13] In general, areas with greater levels of affluence will experience better than average health, while areas with lower levels will experience worse than average health.

Note: The indicator used to record family income is the median, rather than the average. The median was chosen in order to avoid disproportionate influence from extreme outliers, which in small samples can often skew data and prove misrepresentative.

Term	Definition	Interpretation	Source
Unemployment rate	Percent of population aged 25 and over, excluding institutional residents.	Indicative of greater or poorer health vulnerability. **High**: More people are unemployed **Low**: Fewer people are unemployed	Statistics Canada, Census 2016
Median Family Income	Median family income from all sources in 2015. The middle point of all the income reported for income in families.	Income is profoundly related to the health status of the population. It is a critical predictor of health status. **High**: Families have higher income **Low**: Families have lower income	Statistics Canada, Census 2016
Lone-Parent Family Income	Median family income of lone parent economic families in 2015.	This group is vulnerable in terms of income, and therefore health. **High**: Families have higher income **Low**: Families have lower income	Statistics Canada, Census 2016
Home Ownership Costs	Percent of homeowners spending more than 30% of income on housing.	May not have the financial "safety net" in case of emergency and may affect ability to make healthy lifestyle choices. It is a predictor of health and financial vulnerability. **High**: Higher home ownership costs **Low**: Lower home ownership costs	Statistics Canada, Census 2016
Housing Rental Costs	Percent of renters spending more than 30% of income on rent.	Impact ability to make healthy lifestyle choices. It is a predictor of health and financial vulnerability. **High**: Higher housing rental costs **Low**: Lower housing rental costs	Statistics Canada, Census 2016
Low Income Based on After-Tax Income	Percentage of private household that fall below the low-income threshold, adjusted for household size.	Indication of living in a vulnerable position that can affect health and wellness. **High:** More people below threshold income **Low:** Less people below threshold income	Statistics Canada, Census 2016

4.2   Education

There is a strong correlation between level of education and future health outcomes. There is clear evidence that those who graduate from high school typically experience better health than non-graduates do.[14] Education is considered a key measure or predictor of SES and health. In Canada (using Statistics Canada's Census data), self-rated health status was found to increase with level of education (elementary to secondary to university) and self-reported chronic conditions generally decreased as education increased.[15]

Some indicators in a subsequent section (4.4) are from the Human Early Learning Partnership Data/Methodology (HELP). HELP is a research initiative based out of the University of British Columbia that works with schools and communities in BC, to research and analyse the long-term effects of young children's environments on their brain development and learning. HELP uses a longitudinal research approach to advance scientific understanding of the importance of early child development as a determinant of long-term health outcomes.

Term	Definition	Interpretation	Source
High School 6-year Completion Rate	Students completing high school within six years of enrollment in Grade 8. **This indicator is reported at the School District level**	Educational achievement is a predictor of long-term health outcomes. High school graduates experience on average better health than non-graduates. **High**: Children are faring better **Low**: Children are faring worse	[Ministry of Education](#)
First time Grade 12 Graduation Rate	A measure of students recorded as being in Grade 12 for the first time in September who then graduate in that same school year. **This indicator is reported at the School District level**	Educational achievement is a predictor of long-term health outcomes. On average, high school graduates experience better health than non-graduates do. **High**: Children are faring better **Low**: Children are faring worse	[Ministry of Education](#)
Post Secondary Education	Percent of Population 25 to 64 with trades certificate or diploma, college and other non-university certificates or diplomas and university undergraduate certificates.	Educational achievement is a predictor of long-term health outcomes. University graduates experience on average better health than non-graduates. **High**: Adults are better educated **Low**: Adults are less well educated	[Statistics Canada, Census 2016](#)

* High School Certificate: A certificate demonstrating a high school level of attainment which is alternative to obtaining a British Columbia Certificate of Graduation. There exist multiple options, namely a British Columbia Adult Graduation Diploma, General Educational Development (GED) Secondary Equivalency Certificate, Adult Basic Education (ABE) Provincial Diploma, and letters of assessment. (http://www.bced.gov.bc.ca/reporting/glossary.php)

4.3   Housing and household composition

Housing can have both direct and long-term impacts on health. Individuals living in substandard housing (e.g. old, cramped, insufficiently insulated or ventilated housing) are more likely to have poorer health than those living in satisfactory housing. On average, when people spend excessive amounts of income on housing, fewer resources are available for other health essentials, especially if they also have an inadequate income. Studies suggest affordable housing improves health outcomes by freeing up resources for food and other essentials. It also reduces stress, exposure to allergens, neurotoxins, and other dangers, as well as provides the stability that enables patients with chronic diseases to access and maintain the level of care they need.[16]

Term	Definition	Interpretation	Source
Lone-Parent Families	Percent of families in private households that are lone-parent families.	Lone-parent families may experience more challenges with healthy living for self and children. May also be more vulnerable in terms of income. **High**: More lone-parent families **Low**: Fewer lone-parent families	[Statistics Canada, Census 2016](#)
Multiple-Family Households	Percent of private households with multiple families.	This group may face greater health vulnerability due to living in close quarters, (e.g. disease transmission) Also may have more support networks such as child-care etc. **High**: More multiple-family households **Low**: Fewer multiple-family households	[Statistics Canada, Census 2016](#)

Term	Definition	Interpretation	Source
Crowded Households	Percent of private households with 6 or more persons living inside them.	This group may face greater health vulnerability due to living in close quarters, (e.g. disease transmission) Also may have more support networks such as child-care etc. **High**: More crowded households **Low**: Fewer crowded households	Statistics Canada, Census 2016
Dwelling in Need of Major Repair	Percent of dwellings rated as needing major repairs by renter or owner.	These buildings carry health risks (e.g. structural integrity, asbestos). They may also indicate financial and health vulnerability. **High**: More dwellings in need of repairs **Low**: Fewer dwellings in need of repairs	Statistics Canada, Census 2016

4.4   Early Development

Healthy development for children and youth has a key impact on an individual's health vulnerability not just in the early years, but also throughout life. A number of important early childhood factors that can have long-term developmental implications on health and social functioning have been identified. These include poverty, family stability and violence, social assistance dependency, residing in public housing, and other related factors, which reflect social conditions that affect children during their formative years.[17] As childhood development has a significant impact on an individual's mental and physical health later in life, these indicators not only show the health of children, but also help to predict the future health of the population. Many of these indicators are also predictors of socio-economic status, and further serve to predict not only the health of the children, but also the overall health of the population.

This section includes both rates and percentages. Please take care to distinguish them.

Term	Definition	Interpretation	Source
Children in Care	Children aged 0 to 18 taken into care (e.g. foster care, specialised residences) by the provincial child care authorities. Rate per 1,000 population.	May be an indicator of broader social issues. **High**: More children in care **Low**: Fewer children in care	BC Ministry of Child and Family Development, 2018
Children in Need of Protection*	Reported child abuse cases per 1,000 children aged 0 to 18 years. Defined as the physical, emotional, or sexual mistreatment of children.	Child abuse predicts financial and health vulnerability. **High**: Higher levels of child abuse **Low**: Lower levels of child abuse	BC Ministry of Child and Family Development, 2017
Preschool Language Development Vulnerability	Percent of Kindergarten children rated as vulnerable for language and cognitive development (problems in reading, writing, and numeracy).	Early development skills are critical predictors of school achievement and social/emotional health. Educational achievement is a predictor of long-term health outcomes. **High**: Children are more vulnerable **Low**: Children are less vulnerable	Human Early Learning Partnership

Term	Definition	Interpretation	Source
Preschool Communication Skills Vulnerability	Percent of kindergarten children rated as vulnerable in communication and general knowledge skills.	Early development skills are critical predictors of school achievement and social/emotional health. Educational achievement is a predictor of long-term health outcomes. **High**: Children are more vulnerable **Low**: Children are less vulnerable	[Human Early Learning Partnership](#)
Preschool Social Development Vulnerability*	Percent of kindergarten children rated as having problems forming friendships, accepting rules, and showing respect for adults.	Early development skills are critical predictors of school achievement and social/emotional health, and can be a predictor of long-term health outcomes. **High**: Children are more vulnerable **Low**: Children are less vulnerable	[Human Early Learning Partnership](#)
Preschool Emotional Development Vulnerability*	Percent of kindergarten children rated as having problems with aggressive behaviour, impulsivity, disobedience, and inattentiveness.	Early development skills are critical predictors of school achievement and social/emotional health, and can be a predictor of long-term health outcomes. **High**: Children are more vulnerable **Low**: Children are less vulnerable	[Human Early Learning Partnership](#)
Preschool Physical Development Vulnerability	Percent of kindergarten children rated as having problems with fine and gross motor skills, daily preparedness for school, washroom skills, or having an established dominant hand.	Early development skills are critical predictors of school achievement and social/emotional health, and can be a predictor of long-term health outcomes. **High**: More development vulnerability **Low**: Less development vulnerability	[Human Early Learning Partnership](#)
Preschool Development Vulnerability in >1 Domain	Percent of kindergarten children rated as having problems more than one domain of development.	Early development skills are critical predictors of school achievement and social/emotional health, and can be a predictor of long-term health outcomes. **High**: More development vulnerability **Low**: Less development vulnerability	[Human Early Learning Partnership](#)
Preschool Development Vulnerability in >1 Domain excl. Communication	Percent of kindergarten children rated as having problems in more than one domain of development excluding communication.	Early development skills are critical predictors of school achievement and social/emotional health, and can be a predictor of long-term health outcomes. **High**: More development vulnerability **Low**: Less development vulnerability	[Human Early Learning Partnership](#)

*Healthy Development: Indicators contributing toward the healthy social development of children and youth.

4.5   Child Health

Like Child and Youth Healthy Development, Child Health has a major impact on vulnerability both for children in their formative years and throughout their entire lives. The tie between these indicators and children's health is clear. In addition to providing information on the health of children in an area, some may also predict vulnerability not just for the child, but the population as a whole, providing broader information regarding the health of the community. In addition, illnesses or injuries received in childhood may have long-term impact, lowering the health status of individuals and requiring increased health services.

This section includes both rates and percentages. Please take care to distinguish them.

Term	Definition	Interpretation	Source
Hospitalizations for Mental Disease and Disorders	Hospitalization per 1,000 children and youth aged 0 to 24 due to an injury or poisoning. Includes all hospitalizations coded with a Major Clinical Category (MCC) 17 (Mental Disease and Disorders).	Indicator of increased burden of mental health concerns. **High**: More mental health hospitalization **Low**: Fewer mental health hospitalizations.	Ministry of Health HealthIdeas, 2018
Injury and Poisoning Hospitalizations	Hospitalization per 1,000 children aged 0 to 14 due to an injury or poisoning. Includes hospitalizations with primary diagnostic codes S00 through T88.	Indicator of a greater social issue such as lack of education or awareness. **High**: More injury and poisoning hospitalization **Low**: Fewer injury and poisoning hospitalizations	Ministry of Health HealthIdeas, 2018
Respiratory Diseases Hospitalizations	Hospitalization per 1,000 children aged 0 to 14 due to a respiratory disease. Includes hospitalizations with primary diagnostic codes J00 through J99.	May be an indicator of potential levels of environmental toxins, chemicals, or pollution. **High**: More respiratory diseases hospitalizations **Low**: Fewer respiratory disease hospitalizations	Ministry of Health HealthIdeas, 2018
Dental Surgeries	Hospitalization per 1,000 children aged 0 to 14 for interventions of the tooth.	May be an indicator for social issues and/or challenges with accessing dental health services. **High**: More hospitalizations for dental surgeries **Low**: Fewer hospitalizations for dental surgeries	Ministry of Health HealthIdeas, 2018
Maternal Smoking	Percent of pregnant women who reported smoking at any time during their current pregnancy.	Predictor of financial and health vulnerability. Maternal smoking can result in life-long health vulnerability for the infant. **High**: Higher levels of maternal smoking **Low**: Lower levels of maternal smoking	BC Perinatal Services, 2018

4.6   Substance Use

High rates of substance use are often associated with poorer health.[18] There is potential for acute incidents or conditions that stem from the use of various substances, but also a prolonged usage effect that can manifest in various chronic diseases and even deaths attributed to a substance.

Term	Definition	Interpretation	Source
Alcohol Sales per Capita*	Litres of absolute alcohol sold per resident population aged 15 and older (1 litre = 58 standard drinks).	Depending on tourism, these numbers can sometimes be misrepresentative of an area. However, higher rates can indicate potentially excessive alcohol consumption that can have adverse effects on the health of a population. **High**: More alcohol sales **Low**: Fewer alcohol sales	University of Victoria, Canadian Institute for Substance Use Research

Alcohol-related hospitalizations	Age-standardized rate of alcohol-related hospitalizations per 100,000 people.	Higher rates of morbidity due to alcohol can reflect both acute and chronic outcomes from alcohol consumption. **High**: More alcohol-related hospitalizations **Low**: Fewer alcohol-related hospitalizations	University of Victoria, Canadian Institute for Substance Use Research
Cannabis-related hospitalizations	Age-standardized rate of cannabis-related hospitalizations per 100,000 people.	Higher rates of morbidity due to cannabis can reflect both direct and indirectly attributable outcomes from cannabis consumption. **High**: More cannabis-related hospitalizations **Low**: Fewer cannabis-related hospitalizations	University of Victoria, Canadian Institute for Substance Use Research
Opioid-related hospitalizations	Age-standardized rate of opioid-related hospitalizations per 100,000 people.	Higher rates of morbidity due to opioids can reflect both direct and indirectly attributable outcomes from opioid consumption. **High**: More opioid-related hospitalizations **Low**: Fewer opioid-related hospitalizations	University of Victoria, Canadian Institute for Substance Use Research
Tobacco-related hospitalizations	Age-standardized rate of tobacco-related hospitalizations per 100,000 people.	Higher rates of morbidity due to tobacco generally reflect more long-term exposure to tobacco smoke. **High**: More tobacco-related hospitalizations **Low**: Fewer tobacco-related hospitalizations	University of Victoria, Canadian Institute for Substance Use Research

* Page 10: Represents sales per resident population 19+, therefore high tourist areas will be overstated.

5   Health Status

Health status indicators measure the health of a population and are useful in predicting and prioritizing the health care needs of the area. This includes births, deaths and morbidity.

5.1   Birth Statistics

Statistics based on birth events form a crucial part of the demographic profile of communities, regions, provinces, and countries. They are used to derive important indicators of health status, fertility, infant mortality, and population growth. In turn, those indicators are used for health planning, policy formulation, research, and commerce.[19]

Term	Definition	Interpretation	Source
Mothers 35 and over	Any mother who was 35 years of age or older at the time of delivery of a live born infant. Rate per 1,000 live births.	Indicator of potential risk to mother and predictor of long-term health vulnerability to the infant. **High**: More elderly gravidae **Low**: Fewer elderly gravidae	BC Vital Statistics
Low Birth Weight Rate	Births weighing less than 2,500 grams per 1,000 live births.	Predictor of lifelong health vulnerability. **High**: More low weight births **Low**: Fewer low weight births	BC Vital Statistics

Term	Definition	Interpretation	Source
Infant Mortality Rate	Deaths of children under 1 year of age per 1,000 live births.	Infant mortality is an internationally accepted indicator of population health status. It is a major contributor to life expectancy and premature mortality. **High**: Higher rate of infant mortality **Low**: Lower rate of infant mortality	BC Vital Statistics
Mothers under 20	Live births to mothers under 20 years of age per 1,000 live births.	Will likely face more challenges with healthy living for self and child due to social, educational, and financial vulnerabilities. **High**: More teen pregnancies **Low**: Fewer teen pregnancies	BC Vital Statistics
Caesarean Rate	A delivery involving the surgical incision of the abdomen and uterine walls, per 1,000 live births.	A measure of high-risk births which could be an indicator of long-term health vulnerability for mother and infant. **High**: More caesareans performed **Low**: Fewer caesareans performed	BC Vital Statistics
Preterm Birth Rate	Newborns with a gestational age of less than 37 weeks per 1,000 live births.	Preterm babies have increased risk of morbidity and premature death. **High**: More preterm births **Low**: Fewer preterm births	BC Vital Statistics
Stillbirth Rate	The complete expulsion or extraction from its mother after at least 20 weeks of pregnancy, or after attaining a weight of at least 500 grams, of a product of conception in which, after the expulsion or extraction, there is no breathing, beating of the heart, pulsation of the umbilical cord, or unmistakable movement of voluntary muscle. Rate per 1,000 births.	Rate of stillbirths is an indicator of population health. **High**: More stillbirths **Low**: Fewer stillbirths	BC Vital Statistics
Live Birth Rate	Infants are considered "live" if there is: (a) breathing; (b) beating of the heart; (c) pulsation of the umbilical cord; or (d) unmistakable movement of voluntary muscle, whether or not the umbilical cord has been cut or the placenta attached. Rate per 1,000 population.	Higher live birth rates are typically reflective of a younger population. **High**: More live births **Low**: Fewer live births	BC Vital Statistics

5.2   Chronic Disease Prevalence

Life expectancies in Canada and BC increased dramatically during the past century. This increase was accompanied by an equally dramatic shift in causes of death. As mortality rates from infectious diseases dropped and people lived longer, mortality rates from chronic diseases increased as more people reached ages in which chronic diseases predominate. In 2017, nearly 45% of the population of Island Health were identified as having some sort of chronic disease, ranging from low complexity conditions like hypertension or asthma, to high complexity conditions like heart failure.[20] Chronic diseases are characterized by complex causality, multiple risk factors, a long latency period, a prolonged course of illness, functional impairment or disability, and in many cases, the unlikelihood of a cure. They can have a profound effect on the physical, emotional, and mental well-being of individuals, often making it difficult to carry on with daily routines and relationships. They are a major contributor to the burden of ill health and premature death, and are associated with significant economic costs (both direct health care costs and lost productivity).[21]

Chronic disease rates are age-standardized to a standard population (2011 Canadian population). This allows for better comparability across geographic regions. Prevalence rates include all cases identified in the current and previous fiscal years, excluding any cases that have died. Incidence rates include all new cases in the current fiscal year.

5.3   Life Expectancy at Birth

This measure indicates the average life expectancy of infants born in the community. Life expectancy at birth is a common measure of the overall health of the population, as the average age of death in the current population can change from premature deaths, especially in smaller communities.

5.4   Mortality Statistics

Mortality statistics play an essential role in health surveillance, planning and research. Causes of death are crucial components of health status for regional, national, and international comparisons. While other causes may have contributed to the death, mortality is recorded by the Underlying Cause of Death, defined as the condition or injury that initiated the train of events leading directly to the death.[22]

The Potential Years of Life Lost (PYLL) rate is a measure of premature mortality. This measure looks at the age of death due to specific causes, and calculates the difference between age at death and a life expectancy of 75 years. This can be read as the potential years of life lost under age 75 per 1,000 people (using standard 2011 Canadian population) due to a specific cause.

Term	Definition	Interpretation	Source
Illicit drug toxicity deaths	Crude rate of illicit drug toxicity deaths per 100,000 people.	Higher rates of mortality due to illicit drug toxicity reflects acute outcomes from illicit drug consumption. **High**: More illicit drug-related deaths **Low**: Fewer illicit drug-related deaths	BC Coroners Service
Alcohol-related deaths	Age-standardized rate of alcohol-related deaths per 100,000 people.	Higher rates of mortality due to alcohol can reflect both acute and chronic outcomes from alcohol consumption. **High**: More alcohol-related deaths **Low**: Fewer alcohol-related deaths	University of Victoria, Canadian Institute for Substance Use Research

Term	Definition	Interpretation	Source
Tobacco-related deaths	Age-standardized rate of tobacco-related deaths per 100,000 people.	Higher rates of mortality due to tobacco generally reflect more long-term exposure to tobacco smoke. **High**: More tobacco-related deaths **Low**: Fewer tobacco-related deaths	University of Victoria, Canadian Institute for Substance Use Research
Circulatory System PYLL	Includes all circulatory diseases, ischemic heart disease, stroke and all other circulatory diseases.	Estimate of the potential years of life lost from premature death, per 1,000 people under 75 years of age. Lower PYLL rates may indicate success in reducing premature deaths from circulatory diseases.	BC Vital Statistics
Digestive System PYLL	Includes all chronic liver disease/cirrhosis.	Estimate of the potential years of life lost from premature death, per 1,000 people under 75 years of age. Lower PYLL rates may indicate success in reducing premature deaths from diseases of the digestive system.	BC Vital Statistics
Accidental Falls PYLL	Deaths due to accidental falls.	Estimate of the potential years of life lost from premature death, per 1,000 people under 75 years of age. Lower PYLL rates may indicate success in reducing premature deaths from falls.	BC Vital Statistics
Malignant Neoplasms (Cancer) PYLL	Cancer mortality includes colorectal, lung, breast, prostate cancer, etc.	Estimate of the potential years of life lost from premature death, per 1,000 people under 75 years of age. Lower PYLL rates may indicate success in reducing premature deaths from cancer.	BC Vital Statistics
Respiratory PYLL	Includes all PYLL from respiratory disease, pneumonia and influenza, bronchitis/emphysema/asthma, and all other respiratory diseases.	Estimate of the potential years of life lost from premature death, per 1,000 people under 75 years of age. Lower PYLL rates may indicate success in reducing premature deaths from respiratory disease.	BC Vital Statistics
Suicide PYLL	PYLL resulting from suicide.	Estimate of the potential years of life lost from premature death, per 1,000 people under 75 years of age. Lower PYLL rates may indicate success in reducing premature deaths from suicide, a social as well as a major public health concern.	BC Vital Statistics
Motor Vehicle Accidents PYLL	PYLL resulting from Motor Vehicle Accidents.	Estimate of the potential years of life lost from premature death, per 1,000 people under 75 years of age. Lower PYLL rates may indicate success in reducing premature deaths from motor vehicle accidents.	BC Vital Statistics

Term	Definition	Interpretation	Source
End/Nut/Met Diseases PYLL	PYLL from Endocrine, Nutritional and Metabolic Diseases and Immunity Disorders.	Estimate of the potential years of life lost from premature death, per 1,000 people under 75 years of age. Lower PYLL rates may indicate success in reducing premature deaths from End/Nut/Met diseases.	BC Vital Statistics
Diabetes PYLL	PYLL from diabetes.	Estimate of the potential years of life lost from premature death, per 1,000 people under 75 years of age. Lower PYLL rates may indicate success in reducing premature deaths from diabetes.	BC Vital Statistics
Arteries/Arterioles/Capillaries PYLL	PYLL from arteries/arterioles/capillaries diseases.	Estimate of the potential years of life lost from premature death, per 1,000 people under 75 years of age. Lower PYLL rates may indicate success in reducing premature deaths from artery/arteriole/capillary disease.	BC Vital Statistics
Pneumonia and Influenza PYLL	PYLL from pneumonia and influenza.	Estimate of the potential years of life lost from premature death, per 1,000 people under 75 years of age. Lower PYLL rates may indicate success in reducing premature deaths from pneumonia and influenza.	BC Vital Statistics
Lung/Tracheal Cancer PYLL	PYLL from lung and tracheal cancer.	Estimate of the potential years of life lost from premature death, per 1,000 people under 75 years of age. Lower PYLL rates may indicate success in reducing premature deaths from lung/tracheal cancer.	BC Vital Statistics
Ischemic Heart Disease PYLL	PYLL from ischemic heart disease.	Estimate of the potential years of life lost from premature death, per 1,000 people under 75 years of age. Lower PYLL rates may indicate success in reducing premature deaths from ischemic heart diseases.	BC Vital Statistics
Chronic Lower Respiratory Diseases PYLL	PYLL from chronic lower respiratory diseases.	Estimate of the potential years of life lost from premature death, per 1,000 people under 75 years of age. Lower PYLL rates may indicate success in reducing premature deaths from chronic lower respiratory diseases.	BC Vital Statistics
Cerebrovascular Disease PYLL	PYLL from cerebrovascular disease.	Estimate of the potential years of life lost from premature death, per 1,000 people under 75 years of age. Lower PYLL rates may indicate success in reducing premature deaths from cerebrovascular disease.	BC Vital Statistics

Term	Definition	Interpretation	Source
All Cause PYLL	PYLL from all causes.	Estimate of the potential years of life lost from premature death, per 1,000 people under 75 years of age. Lower PYLL rates may indicate success in reducing premature deaths from all-causes.	BC Vital Statistics

6   Health Service Utilization

Health service utilization data, like health status, provides insight into a population's health and its acute care needs by revealing a community's acute care use (i.e. visit to an acute care facility for inpatient or day procedure). Health service utilization is influenced by several factors, such as health status, demographics, physician referral patterns, patient choice, distance to care, and wait lists. Utilization data does not necessarily reflect what health care services a community *needs*, but more accurately what a community is *using*. While these two concepts are interconnected, they are not identical.

These statistics show high-level acute care use of an LHA by several different indicators including inpatient versus day care, inpatient case rates for medical, surgical, maternity, and psychiatric services, alternate level of care (ALC) rate, and ambulatory case sensitive conditions (ACSC) rate.

This data looks at the most common cases for a region, the referral patterns, and bed use. It must be considered as a whole, relative to other indicators and the population demographics.

6.1   Health Matrix

Developed by the Ministry of Health, the Health Matrix is a way of categorizing the population into different groups based on their health service utilization patterns. The groups are hierarchical based on resource intensity, going from no or low use of the publicly funded health care system, to highest use at the end of life. It is important to note that an individual may fall into multiple categories, but will only be counted in the higher intensity group for their conditions. Therefore, caution should be used when interpreting certain categories – for example, the proportion of the population that falls in the severe mental health and substance use category does not represent the TOTAL proportion of the population suffering from severe mental health or substance use, but rather the proportion whose main health care service utilization falls within this area.

6.2   Complex Continuing Care

Complex continuing care includes home care and home support services delivered in the community setting. Home care includes nursing functions such as assessment, education, counselling, medical/surgical care, while home support includes functions carried out by community support workers around activities of daily living (ADL).

The measures presented in this section include the number of home care clients and the number of visits, as well as the number of home support clients and the number of home support hours. Within the body of the LHA profiles, these indicators are expressed as a rate per 1,000 people aged 75 and over, while some home care and home support services for the population as a whole are reported in the summary pages. The majority of services are provided to older age groups. The rates per population 75 and over allow a better comparison across regions that may have different age distributions. For example, Oceanside, which has an older population, has a higher

rate of home care clients overall, but a lower rate when looking only at the 75 and over population. As with all utilization data, rates reflect the populations' use of services and can be influenced by many factors including need, availability, and accessibility of services.

6.3   Hospital Admissions and Emergency Visits

This section records hospital cases and emergency visits. These indicators are based on LHA of residence regardless of the location of the hospital at which the patient received care. For example, a person from Nanaimo receiving care at Royal Jubilee Hospital will be counted in the Nanaimo LHA profile.

Category	Definition	Interpretation
Medical	All cases which do not involve surgery – e.g., illness diagnosis, infection or illness treatment with pharmaceuticals, radiation/chemotherapy, convalescence/recovery, etc.	Medical patients on average have greater lengths of stay, and higher rates of Emergency Department admittance.
Surgical	All cases which involve surgery.	Surgical patients often have lower lengths of stays and are typically admitted by means other than the Emergency Department.
Maternity	All cases involving pregnancy and childbirth (grouped by major clinical category (MCC)).	High maternity rates suggest a younger population that utilizes more maternity service; low rates suggest an older population.
Psychiatric	Most cases involving mental diseases and disorders (grouped by MCC) are flagged as psychiatry cases; some of these cases, however, are flagged as medical rather than psychiatry; this is based on the cases' CMG and the patient's age group.[23]	Generally reflective of the mental health of a population. Higher rates suggest greater vulnerability. Patients with mental diseases and disorders on average have high lengths of stay and a high rate of Emergency Department admittance.
Acute Care Inpatient Cases	Patients who are admitted to a hospital or care centre and stay for at least one night.	Generally reflective of more complex cases or more invasive procedures.
Acute Care Day Cases	Patients who are admitted to a hospital or care centre, typically for diagnosis or treatment, but do not stay overnight. They are also known as outpatients or ambulatory patients.	Generally reflective of less complex cases or less invasive procedures.
ALC	Alternative Level of Care (ALC) is the percentage of inpatient days where a physician (or designated other) has indicated that a patient occupying an acute care hospital bed was well enough to have been cared for elsewhere.[24]	This indicator is designed to assess the processes that ensure the placement of patients in the most appropriate care setting. It identifies the proportion of patients who are occupying acute care beds due to the unavailability of services in another more appropriate setting.

Category	Definition	Interpretation
ACSC	The Ambulatory Care Sensitive Conditions (ACSC) rate represents people with conditions where appropriate ambulatory care can prevent or reduce the need for hospital admission, who nevertheless have been admitted to hospital.[25] For example <u>angina</u>, <u>diabetes</u>, heart failure, grand mal seizures, etc.	ACSC is an indicator of admissions practices and/or ambulatory care resources. Timely and effective ambulatory care can potentially reduce the risk of hospitalization by possibly preventing or controlling the onset of an illness or by managing the chronic condition. May be related to factors such as access to and quality of primary care, the prevalence and acuity of chronic conditions in the population, socio-economic status, and differences in community and hospital-based practice patterns. [26]
ED Visits	Unscheduled visits to Emergency Department or Urgent Care Centre.	These statistics are compared to the Island Health Emergency Department utilization to indicate where ED use may be higher than average.
Canadian Emergency Department Triage & Acuity Scale (CTAS)[27]	A measure of severity of condition brought to the Emergency Department. One is the most severe and 5 the least.	A high number of 4s and 5s can be indicative of inappropriate system use for one reason or another.
Primary Care	Population attached to a physician at the practice level.	This measure provides an indication of how accessible primary health care service are available in the region. Higher attachment at the primary care level may lead to a reduction in the usage of emergency department and acute care services.

Glossary

Medical definitions from International Classification of Disease 10 Codes[28] unless otherwise cited:

Alternate Level of Care: (ALC) is indicative of time spent in an inappropriate level of care, for example, a long-term residential patient occupying an intensive care bed due to lack of available residential care beds. As the majority of ALC patients take up beds of a higher level of care than they require, rather than a lower, they are inefficient and costly as well as being uncomfortable to the patients themselves who feel out of place.

Ambulatory Care Sensitive Conditions: (ACSC) represent people with conditions where appropriate ambulatory care can prevent or reduce the need for hospital admission, who nevertheless have been admitted to hospital.[29] It is therefore an indicator of admissions standards and/or ambulatory care resources.

Canadian Emergency Department & Triage Acuity Scale (CTAS): Scale indicating the gravity of a patient's injuries and conditions upon arrival to an acute care setting. Level 1 is the most severe and is categorized as resuscitation. Level 5 is the least severe and is categorized as non-urgent.[30]

Census Family: Defined as a married couple and their children; a common law relationship between two partners and their children; or a lone parent regardless of marital status living in a dwelling with at least one child. All members of the census family live in the same dwelling.[31]

Cerebrovascular Disease: Disease of the blood vessels and, especially, the arteries that supply the brain. Cerebrovascular disease is usually caused by atherosclerosis and can lead to a stroke.

Congestive Heart Failure: Congestive heart failure (CHF) is a condition in which the heart's function as a pump is inadequate to deliver oxygen rich blood to the body.

Chronic Obstructive Pulmonary Disease: Chronic obstructive pulmonary disease (COPD) is comprised primarily of three related conditions – chronic bronchitis, chronic asthma, and emphysema. In each condition there is chronic obstruction of the flow of air through the airways and out of the lungs, and the obstruction generally is permanent and may be progressive over time.

Dementia: Significant loss of intellectual abilities such as memory capacity, severe enough to interfere with social or occupational functioning. Criteria for the diagnosis of dementia include impairment of attention, orientation, memory, judgment, language, motor and spatial skills, and function. By definition, dementia is not due to major depression or schizophrenia.

Demographics: Statistical information about characteristics of a population such as age, income, gender, ethnicity, age, educational attainment, etc.

Diabetes: Diabetes mellitus is a group of metabolic diseases characterized by high blood sugar (glucose) levels, which result from defects in insulin secretion, or action, or both.

Enteritis: Crohn's disease by another name, a chronic inflammatory disease of the intestine, primarily in the small and large intestines, but which can occur anywhere in the digestive system between the mouth and the anus.

Health Authority: Governing body with responsibility for the planning, coordination and delivery of health services in a specific region, including hospital, long-term care and community services. (BC Medical Association Glossary)

Hypertension: High pressure (tension) in the arteries.

Ischemic Heart Disease: (IHD) Any of a group of acute or chronic cardiac disabilities resulting from insufficient supply of oxygenated blood to the heart.[32]

Major Clinical Category: Major Clinical Category (MCC) assignment, which represents the first step in the grouping methodology, is often determined by the most responsible diagnosis (MRDx). Usually, the MRDx is a unique assignment to one MCC known as the 'home' MCC.

Osteoarthritis: Osteoarthritis is a type of arthritis that is caused by the breakdown and eventual loss of the cartilage of one or more joints. Cartilage is a protein substance that serves as a "cushion" between the bones of the joints. Osteoarthritis is also known as degenerative arthritis.

Perinatal: Pertaining to or occurring in the period shortly before, during and after birth, starting at 22 completed weeks of gestation and ending seven completed days after birth.[33]

End Notes

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