

Understanding the Social Determinants of Health

**A Discussion Paper
from the Office
of the Chief Medical Health Officer
Vancouver Island Health Authority
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Message from the Chief Medical Health Officer

IT IS MY PLEASURE TO PRESENT THIS DISCUSSION PAPER on the very important issue of social determinants of health. I expect this report to serve as a foundation for developing population health strategies and establishing collaborative efforts to address the determinants of health in the communities that the Vancouver Island Health Authority (VIHA) serves.

Addressing the social determinants of health poses a unique challenge to the public, private and non-profit sectors in our communities because it requires collaboration among a wide variety of partners. The lessons to be learned from our growing knowledge of social determinants are clear—almost every aspect of our community life, family life and individual experiences can affect our health. It is evident that further advances in health care will be increasingly dependent upon our ability to address the social determinants in a collaborative manner.

A recent report by an expert commission on health inequalities in Europe came to the disturbing conclusion that the health gap between Europe's most affluent and least affluent citizens has actually increased during the past twenty years, despite substantial improvements in health care systems.¹ We do not know if a similar trend has occurred in British Columbia or in the VIHA service area. However, we should take note of the European experience because it reinforces the important message that health care systems are limited in their impact on the health status of the population. The most important forces in promoting health exist in our communities—in schools, with employers and recreation services, and within our social and economic policies.

There are many groups across the VIHA service area working together to address social determinants, and we can learn from their experiences. In the coming months, the Ministry of Health will release a number of important evidence papers in support of core public health programs in the province. Many of these will be relevant to the social determinants. VIHA is developing a Population Health and Wellness Strategy which will also address social determinants. Beyond our own borders, the United Kingdom and New Zealand have identified health inequities as national policy priorities, and invested substantial funding in corresponding programs.

As our knowledge of the importance of the social-economic gradient of health grows, so does the momentum to do something about it. This report is a step towards identifying and understanding the social determinants of health in the VIHA service area. The Office of the Chief Medical Health Officer will continue to play an important role in addressing these critical issues through its own programs and through collaborations with the many community partners who are committed to this cause.

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¹ Mackenbach, J. Health Inequities: Europe in Profile. Brussels: UK Presidency of the EU. October 2005

About This Report

This report profiles the health status of Vancouver Island Health Authority residents, and the important socio-economic factors that play a critical role in determining health status. We have developed this profile using a variety of data and data sources. Data is presented at different geographical levels, depending on the type of data employed.

The Geography of the Vancouver Island Health Authority

VIHA is responsible for Vancouver Island, the Gulf Islands and a small area on the mainland. VIHA's geographic area is divided into three health service delivery areas (HSDAs), shown on Map 1. The HSDAs are further divided into 14 local health areas (LHAs) as seen on Map 2.

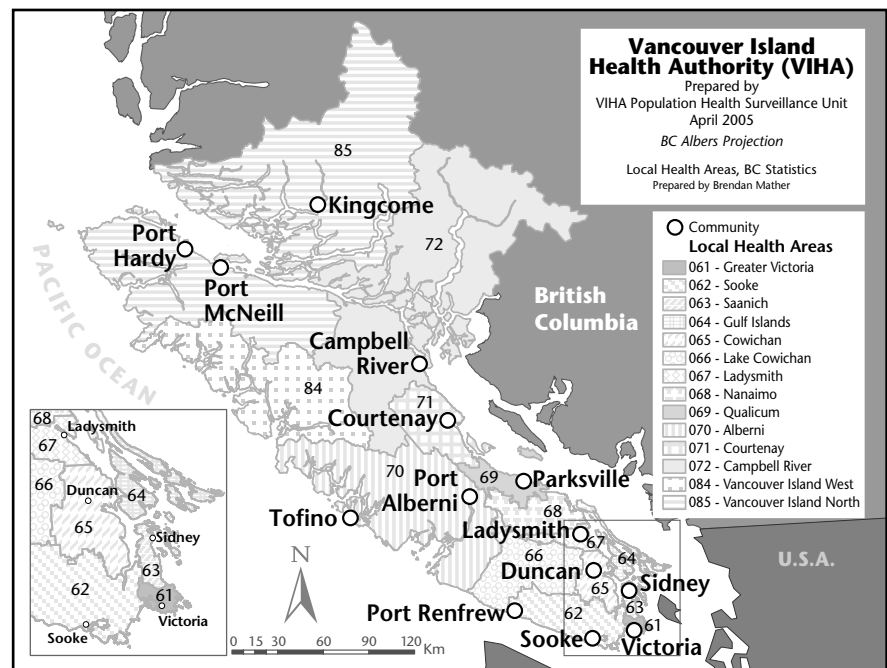
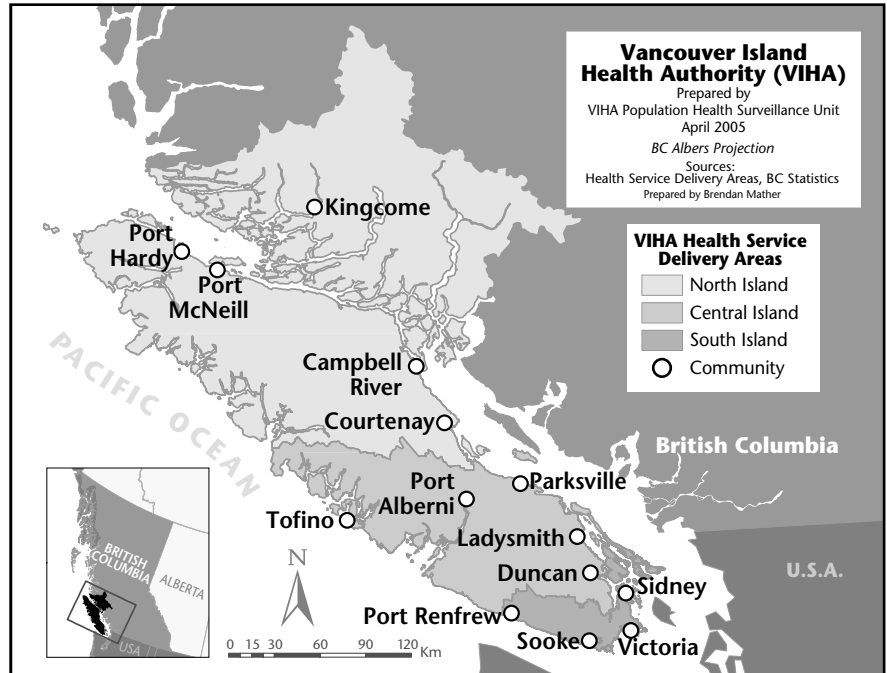
This report presents data and analyses at all three levels of aggregation—Vancouver Island Health Authority, health service delivery areas, and local health areas.

The Sources of Data

Much of the data used in this report is from three key sources: BC Stats, BC Vital Statistics, and the Canadian Community Health Survey (CCHS). The data glossary (see appendix) provides detailed information about the meaning of the data and the sources of all tables and graphs presented in this report.

All data from BC Stats and BC Vital Statistics is publicly available on their Web sites, and both those agencies have done an exceptional job of making validated indicators available at all the required geographical levels.

The third primary source of data is the CCHS, a longitudinal survey carried out by Statistics Canada on a biannual basis. Most of the analyses in this report



used the most recent version of this survey (CCHS 2.1), which was carried out in 2003. All analyses presented in this report were carried out by the staff of the Population Health Surveillance Unit in the Office of the Chief Medical Health Officer at VIHA. Results are presented at the geographic level commensurate with the sample-size limitations for each analysis. The sample size of the CCHS will not support analysis at the LHA level, and the ability to generate valid indicators at the HSDA level is generally restricted to prevalence rates for the population as a whole. More extensive analysis is possible for the health authority area, but even this capacity can be limited by prevalence rates for small population sub-groups. In these cases, the analyses included in this report were carried out for the provincial population as a whole. Detailed information about the CCHS can be found on the Statistics Canada Web site at <http://www.statcan.ca/>.



CHAPTER 1

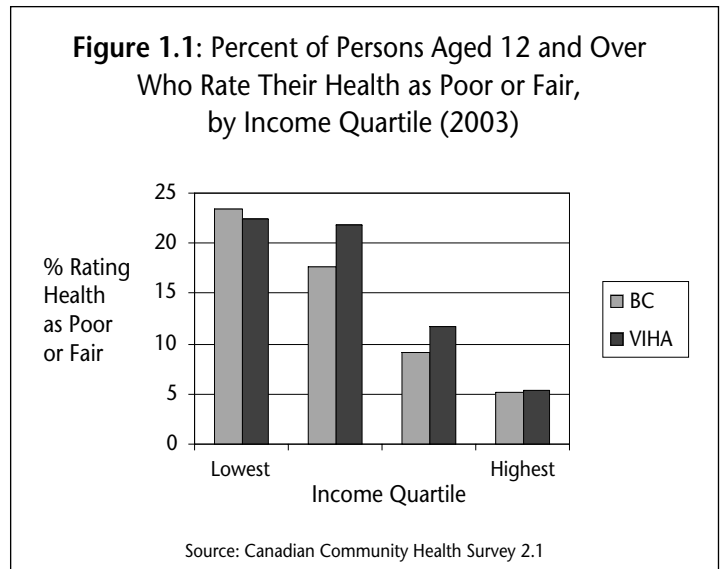
The Social Determinants of Health

*Poor social and economic circumstances affect health throughout life. People further down the social ladder usually run at least twice the risk of serious illness and premature death as those near the top. Nor are the effects confined to the poor; the social gradient in health runs right across society, so that even among middle-class office workers, lower ranking staff suffer much more disease and earlier death than higher ranking staff.*²

In this statement, the World Health Organization succinctly summarizes one of the most important developments of the past thirty years in understanding the health of populations. All developed countries have experienced substantial improvements in health status. However, these gains have not been shared equally among all members of society, despite relatively equal access to health care. The health gradient operates across the income spectrum, not just between low- and high-income members of society. Health status improves at each level of the social hierarchy. As our understanding of the health gradient grows, it becomes increasingly obvious that, to further improve the health of our population, we must reduce the health inequities between social groups. This will require a concerted effort to address the factors that form the foundation of the gradient. Those factors have become collectively known as **the social determinants of health**.

Is there a Socio-Economic Gradient of Health in British Columbia?

British Columbia and Vancouver Island are not exempt from the effects of social determinants. When BC respondents to the CCHS were asked to rate their state of health as poor or fair, a pronounced income gradient was apparent in their responses. Figure 1.1 illustrates the socio-economic gradient of health for BC and Vancouver Island. The gradient of health is particularly pronounced on the provincial level. Persons in the lowest income quartile were four and a half times more likely than those in the highest quartile to rate their health as poor or fair, and the percentage decreased with each ascending income quartile. Vancouver Island respondents also conformed to the gradient but showed a higher percentage of poor/fair health ratings in the second lowest income quartile.



² World Health Organization: Social Determinants of Health—The Solid Facts 2003

Table 1.1: Health Status and Economic Hardship in BC Local Health Areas

Health Status Measure	Most Affluent LHAs	Least Affluent LHAs
Life Expectancy (years)	80.9	79.1
Standardized Mortality Ratio	.96	1.12
Infant Mortality/1,000 Births	3.2	5.5

Source: PHSU Analysis of Vital Statistics and BC Stats data

The effects of health inequities also operate at the community level. Table 1.1 measures health status according to economic hardship in local health areas in BC. The 19 least affluent local health areas (LHAs) have substantially lower life expectancies, higher standardized mortality and higher infant mortality rates than the 19 most affluent LHAs.

Why is there a Social Gradient of Health?

Given the dramatic growth that has occurred in health care services in the past forty years within publicly funded health systems, it may seem surprising that the socio-economic gradient of health continues to exist in such profound proportions. Over the past three decades, a substantial body of international research has increased our understanding of the dynamics of the gradient. The research indicates that the ability of the health care system to reduce health inequities is limited by social determinants of health that are beyond its control. Richard Wilkinson, a leading researcher in the area of health inequities, has summarized the most critical social determinants:

Most important are three intensely social risk factors. First is low social status, which in this context is less a matter of low material living standards themselves than of their social consequences, such a feeling looked down upon, having an inferior position in the social hierarchy, and subordination (and therefore also a reduced ability to control one's circumstances and work). Second comes poor affiliations of all kinds, including lack of friends, being single, weak social networks, lack of involvement in community life, and so onThird comes early childhood experience which prepares us to deal with more conflict-ridden or more affiliative social environments.³

Underlying those social determinants—social status, social support and early childhood experiences—is the fundamental importance of stress as a contributory factor in health. Chronic exposure to stress inhibits

the ability of our immune system to protect us from disease. As a result, persons exposed to prolonged stress become more vulnerable to illnesses ranging from infectious diseases to cardiovascular conditions. Chronic stress is also linked to a number of risk conditions such as depression, alcohol and substance abuse, and smoking.⁴

On Vancouver Island, social determinants of health show a strong socio-economic gradient. Table 1.2 compares social determinants by income level.

Table 1.2: The Income Gradient and Health in the VIHA Service Area 2003

	Income Level				
	Lowest	Lower Middle	Middle	Upper Middle	Upper
Percent who describe themselves as "extremely stressed"	15.0	9.5	4.9	1.6	4.4
Percent who report only fair or poor mental health	26.5	12.8	11.4	4.3	3.0
Percent who report dissatisfaction with life-in-general	18.9	9.6	5.3	2.3	1.1
Percent who report weak sense of belonging to community	40.4	38.5	34.7	29.8	29.6

Source: Canadian Community Health Survey 2.1, 2003

³ Wilkinson, R. The Impact of Inequality: How to Make Sick Nations Healthier. NY: The New Press. 2005. pg 25

⁴ Ibid

Social Determinants on Vancouver Island

Vancouver Island has a population of 723,000 persons living in diverse socio-economic circumstances and environments. In an attempt to measure socio-economic diversity, BC Stats has produced a composite socio-economic index that combines 24 measures of the following factors: economic hardship, crime, health, education, children-at-risk and youth-at-risk. A standardized score was calculated for each LHA. Scores can be negative or positive, depending upon whether they are above or below the mean score for all LHAs. Because of the way in which the scores are constructed, negative scores reflect the higher-performing areas while positive scores reflect lower-performing areas.

The results for VIHA's local health areas are presented in Table 1.3. The diversity among the LHAs is striking. Vancouver Island contains LHAs that are grouped among the "best" areas of the province (Saanich, Sooke, Gulf Islands, and Ladysmith), and others that are among the worst-performing areas in the province (Alberni, Lake Cowichan, Campbell River and Nanaimo).

Table 1.4 shows the ranking of each LHA by socio-economic indicator. In general, the more affluent LHAs scored well for all indices. There were, however, exceptions to this pattern; for example, the lower scores for Qualicum Beach and the Gulf Islands on the health measure. A similar pattern was apparent among the less affluent LHAs. Three of the four areas that ranked in the fourth quartile for economic hardship, also ranked in the third or fourth quartile for the remaining indices. Once again, there was an exception to this pattern—Lake Cowichan reported relatively low crime rates and higher education scores, despite ranking in the lower economic quartile.

The Purpose of This Report

The socio-economic gradient of health, which has become apparent in most developed countries, is present in the VIHA service area. The communities that make up this area represent a wide variety of socio-economic circumstances and health conditions. This report will examine, in

Local Health Area	Socio-Economic Index	Provincial Quartile
Saanich	-.75	1
Sooke	-.49	1
Gulf Islands	-.41	1
Ladysmith	-.36	1
Qualicum Beach	-.20	2
Greater Victoria	-.12	2
Courtenay	-.01	2
Cowichan	.04	3
Vancouver Island North	.23	3
Nanaimo	.31	4
Campbell River/West VI	.32	4
Lake Cowichan	.51	4
Alberni	.62	4

Source: BC Stats

	Economic Hardship	Crime	Health	Education	Children-at-Risk	Youth-at-Risk
Saanich	1	1	2	1	1	1
Sooke	1	1	1	2	2	2
Gulf Islands	1	1	4	1	1	1
Ladysmith	1	1	1	2	2	2
Qualicum Beach	2	2	3	2	2	2
Greater Victoria	2	2	2	1	2	3
Courtenay	3	2	2	2	3	3
Cowichan	4	2	3	1	3	3
Vancouver Island North	2	3	3	4	4	3
Nanaimo	4	3	3	3	4	4
Campbell River/VI West	3	4	2	3	3	4
Lake Cowichan	4	3	4	3	4	4
Alberni	4	3	4	4	4	4

Source: BC Stats

detail, the social determinants of health and the health status of residents in the VIHA service area, and will highlight the role the determinants play within specific population groups for the purpose of population health planning.

The next five chapters will examine different aspects of the health status of island residents: mortality, chronic disease, activity limitations, self-rated health and communicable disease. In subsequent chapters the three primary social determinants—income distribution, early childhood experiences, and social support—will be examined in detail in terms of their effects upon the lives of VIHA area residents. The final chapters will discuss some of the broader issues related to the social determinants.



CHAPTER 2

Health Status: Life Expectancy and Mortality

Life expectancy is a traditional and widely-used measure of population health status. It reflects the average number of years that a person can reasonably expect to live. In developed nations, substantial increases in life expectancies have been a hallmark of the twentieth century. In British Columbia, for example, average life expectancy increased by over twelve years between 1950 and 2004.

During the period 2001–2004, life expectancy on Vancouver Island was 80.4 years, an increase of 2.3 years from the late 1980s. BC’s life expectancy was 80.8 years during the same multi-year period (2001–2004), representing an increase of 2.8 years from the late 1980s. Life expectancy on Vancouver Island, therefore, compares favourably with the province as a whole, but recent gains have lagged slightly.

Table 2.1 shows there is substantial variation among LHAs. Some areas, such as Saanich and the Gulf Islands, enjoy average life expectancies that rank among the highest in the developed world.⁵ Others, such as Vancouver Island North and Alberni report life expectancies as much as five years lower.

Standardized Mortality Ratios

A second measure of population health status is the standardized mortality ratio (SMR). This measure reflects the extent to which mortality rates in specified areas, such as LHAs, are higher or lower than the provincial rate after removing the effects of age differences in the populations. In other words, the SMR reflects the extent to which differences in mortality rates are attributable to underlying conditions, not to differences in the proportion of elderly people in the populations.

⁵ Organization for Economic Cooperation and Development, Health Statistics 2005. Paris, 2005

Table 2.1: Life Expectancies at Birth in VIHA Local Health Areas

Local Health Area	Life Expectancy 2001–2005	Provincial Quartile
Saanich	82.6	1
Gulf Islands	82.1	1
Lake Cowichan	82.0	1
Qualicum	81.0	1
Greater Victoria	80.6	2
Sooke	80.4	2
Courtenay	80.2	2
Cowichan	80.0	2
Nanaimo	79.8	3
Vancouver Island West	79.7	3
Campbell River	79.5	3
Ladysmith	78.8	3
Alberni	77.8	4
Vancouver Island North	77.3	4
British Columbia	80.8	

Source: BC Stats

Table 2.2: Standardized Mortality Ratios in VIHA Local Health Areas

Local Health Area	Standardized Mortality Ratio 2000–2004	Provincial Quartile
Gulf Islands	.82	1
Saanich	.85	1
Qualicum	.95	1
Lake Cowichan	.97	1
Cowichan	1.01	2
Sooke	1.02	2
Greater Victoria	1.03	2
Courtenay	1.03	2
Nanaimo	1.07	3
Campbell River	1.09	3
Ladysmith	1.11	3
Alberni	1.17	4
Vancouver Island West	1.17	4
Vancouver Island North	1.34	4
British Columbia	1.0	

Source: Vital Statistics

Table 2.3 Mortality in VIHA Service Area 2000-2004

Cause of Death	SMR	SMR Compared with Provincial Average	Changes in SMR During Past 15 Years	No. of Deaths 2000–2004
All Causes	1.01	Same as BC rate	Decreasing	
Cancer	1.06	Significantly Higher	Decreasing	4,363
Endocrine, Nutritional & Metabolic	.90	Significantly Lower	Increasing	1,053
Diabetes	.89	Significantly Lower	Increasing	818
Circulatory	.98	Same as BC rate	Decreasing	10,532
Respiratory	.94	Significantly Lower	Decreasing	3,048
Digestive	1.02	Same as BC rate	No Change	1,197
Motor Vehicle Accidents	.76	Significantly Lower	Decreasing	271
Falls	1.22	Significantly Higher	No Change	433
Suicide	1.13	Significantly Higher	No Change	408
Alcohol-Related	1.12	Significantly Higher	No Change	2,016
Medically Treatable	.88	Same as BC rate	No Change	106
Drug-Related	1.15	Significantly Higher	No Change	379

Source: Vital Statistics

Table 2.2 shows substantial variation in SMRs among LHAs. The Gulf Islands and Saanich report age-adjusted mortality rates significantly lower than the provincial average, while Alberni, Vancouver Island West and Vancouver Island North report rates between 17 and 34 percent higher than the provincial average.

SMRs can also be used to examine specific causes of death, as presented in Table 2.3. Although the overall SMR for Vancouver Island is very close to the provincial average, there is substantial variation with respect to specific diseases. Between 2000 and 2004, island residents were significantly more likely to die from cancer, falls, suicide, and alcohol/drug-related causes. Of these causes, cancer and alcohol-related diseases accounted for the greatest number of deaths. By contrast, VIHA area residents were significantly less likely to die from endocrine, nutritional

and metabolic diseases; diabetes; and motor vehicle accidents than would be expected from provincial rates.

Table 2.4 shows six LHAs on Vancouver Island that reported significantly higher SMRs than the provincial average and lists causes of death responsible for the elevated SMRs. The common factor among those six LHAs is alcohol-related mortality.

Table 2.4 Local Health Areas With Significantly Higher Standardized Mortality Rates

LHA	SMR 2000–2004	Which Disease-Specific Causes of Death are Higher than the Provincial Average?
Alberni	1.23	Cancer Diabetes Circulatory Alcohol-Related
Vancouver Island North	1.31	Ischemic Heart Respiratory (Chronic Lung) Alcohol-Related
Campbell River	1.18	Lung Cancer Alcohol-Related
Nanaimo	1.13	Ischemic Heart Falls Alcohol-Related
Ladysmith	1.11	Circulatory Alcohol-Related
Greater Victoria	1.03	Cancer Cerebrovascular/Stroke Suicide Alcohol-Related Drug-Related

Source: Vital Statistics Annual report 2004



Infant Mortality

One of the reasons for slightly slower gains in life expectancy in VIHA's service area, compared with the province as a whole, may be explained by recent trends in infant mortality. The infant mortality rate (IMR) has climbed for VIHA and the province as a whole since 2000, but the rate of increase has been slightly higher for VIHA (see Figure 2.1). One explanation for rising IMRs in recent times relates to the development of neonatal critical-care resources in many centres. As a result of improved medical interventions, more high-risk infants are surviving birth; but, because of ongoing complications, they do not survive the first year of life. However, this may not explain the differential rates of increase between VIHA and the province as a whole.

It is also notable that there is substantial variation in IMRs among LHAs. These numbers should be interpreted with some caution because the actual number of deaths is quite small; consequently, small fluctuations in numbers can result in large changes in rates. For this reason, the rates in Table 2.5 are calculated across a five-year period.

Table 2.5 ranks VIHA's IMRs according to provincial quartiles. In terms of infant mortality, only one LHA in VIHA ranks in the healthiest quartile among British Columbia's LHAs, while six rank in the least healthy quartile. The rates in Vancouver Island North are particularly high.

Conclusion

Life expectancy in VIHA's service area compares favourably with the provincial rate, but there is substantial variation present among LHAs. In recent years, the gain in life expectancy has been slightly lower for the VIHA population than for the province as a whole, and it is possible that this lag is partially due to higher rates of infant mortality in the VIHA service area. Six of the VIHA LHAs fall into the highest provincial quartile for IMRs between 1999 and 2003. In general, higher rates were recorded in areas that experience higher rates of socio-economic problems, with a particularly high rate in Vancouver Island North. The notable exception is the relatively high rate in the Gulf Islands. This area reports higher than average incomes but, unlike other high-income areas, it has a higher than average rate of infant mortality.

It is important to interpret these figures with some caution because of the relatively low number of deaths involved. In the case of the Gulf Islands, for example, the rate is based on only four deaths during the five-year period. At the same time, however, the issue appears to warrant further study.

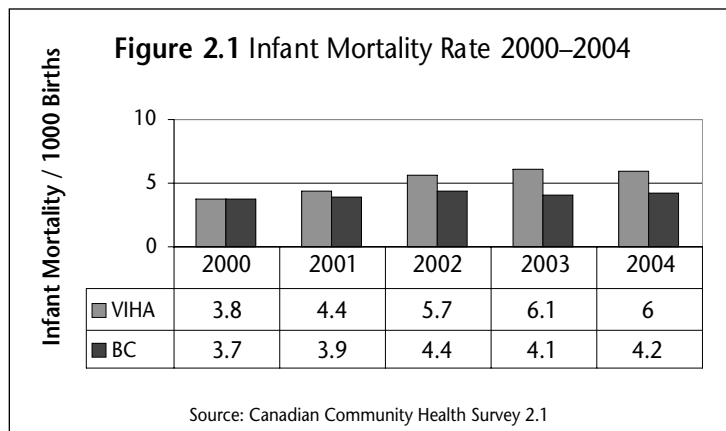


Table 2.5: Infant Mortality in VIHA Local Health Areas*

Local Health Area	Infant Mortality Rate 1999–2003	Provincial Quartile
Qualicum	2.5	1
Sooke	3.2	2
Cowichan	3.7	2
Saanich	4.0	2
Greater Victoria	4.3	3
Alberni	4.7	3
Nanaimo	4.7	3
Campbell River	4.7	3
Ladysmith	5.7	4
Vancouver Island West	5.9	4
Courtenay	6.7	4
Lake Cowichan	8.7	4
Gulf Islands	8.7	4
Vancouver Island North	16.6	4
British Columbia	4.0	

*Infant Deaths per 1,000 Live Births
Source: BC Stats

CHAPTER 3

Health Status: Chronic Disease

Table 3.1: Chronic Diseases in VIHA and BC, 2003

Chronic Conditions	Number of Persons in VIHA Aged 12+ With Condition	VIHA Percent of Population 12+	BC Percent of Population 12+
Allergies (other than food)	185,907	31.3	29.0
Back Problems	138,111	23.2	22.6
Arthritis/Rheumatism	114,489	19.3	16.3
High Blood Pressure	91,907	15.5	13.3
Migraine Headaches	60,310	10.2	9.6
Food Allergies	55,574	9.4	9.2
Asthma	49,415	8.3	7.4
Mood Disorder	46,078	7.8	6.4
Thyroid	38,957	6.6	5.0
Cataracts	34,827	6.5	4.6
Heart Disease	32,875	5.5	4.3
Anxiety Disorder	31,075	5.2	4.6
Diabetes	28,466	4.8	4.5
Learning Disability	27,075	4.6	2.9
Urinary Incontinence	25,936	4.4	3.5
Multiple Chemical Sensitivities	21,051	3.6	2.6
Bowel Disorders	20,261	3.4	2.6
Ulcers	17,497	3.0	2.8
Chronic Bronchitis	15,929	2.7	2.3
Glaucoma	13,918	2.6	1.7
Cancer	13,847	2.3	1.8
Fibromyalgia	12,460	2.1	2.2
Chronic Fatigue Syndrome	12,265	2.1	1.7

Bolded figures in Column 1 indicate which diseases showed a significant socio-economic gradient in BC
 Bolded figures in Columns 3 and 4 indicate which rates were significantly different between VIHA and the rest of BC.

Source: Canadian Community Health Survey 2.1

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.

Most people experience some form of chronic disease. According to the CCHS 2.1, 74.5 percent of VIHA area residents reported having been diagnosed with a chronic condition in 2003. This percentage is significantly higher than the rate of 70 percent for the province as a whole. The slightly higher island rate is partially attributable to the higher concentration of elderly residents. The range of chronic conditions is presented in Table 3.1.

VIHA residents reported rates significantly higher than the rest of the province for allergies (other than food), arthritis/rheumatism, high blood pressure, mood disorders, thyroid conditions, cataracts, heart disease, learning disabilities, urinary incontinence, ulcers, multiple chemical sensitivities, bowel disorders, and glaucoma. Some of these higher rates may be partially attributable to the higher proportion of elderly people in VIHA's service area. Notable exceptions, which are not age-related illnesses, include the higher rates for non-food allergies, mood disorders, and learning disabilities.

Table 3.2 shows the incidence of chronic disease for VIHA's three HSDAs. The highest prevalence of chronic conditions is reported for the North Island and the lowest rate is reported on the Central Island. The South Island and North Island rates were significantly higher than the provincial average, while there was no significant difference between the Central Island

Table 3.2: Percent of Persons Reporting Chronic Conditions in Health Service Delivery Areas, 2003

South Island	74.8
Central Island	72.5
North Island	77.8

Source: CCHS 2.1

rate and the provincial average.

The Socio-Economic Gradient and Chronic Disease

Given the strong socio-economic gradient in health status, it is not surprising there is also a gradient in the prevalence of chronic conditions. Figure 3.1 demonstrates that the primary effects of the socio-economic gradient are most apparent for the population aged less than 65. After the age of 65, the gradient becomes less defined. In other words, as people move down the income gradient, they are more likely to develop chronic disease at an earlier age.

Most, but not all, of the chronic diseases listed in Table 3.1 show a significant socio-economic gradient in BC. Those in bold print in the first column were found to have a statistically significant relationship with income. The exceptions were back problems, migraine headaches, food allergies, asthma, thyroid conditions, multiple chemical sensitivities, bowel disorders and chronic fatigue syndrome.

What Groups Report Higher Rates of Chronic Disease?

Table 3.3 compares the incidence of chronic conditions for different demographic groups. The risk of chronic disease increases with age; consequently, it is not surprising that island residents aged 65 and older have higher reported rates of chronic conditions than persons under 65. It is noteworthy, however, that two-thirds of the younger population report chronic conditions.

The chronic disease rate is higher among females; widowed, separated/divorced persons; and adults with less than a secondary school education.

Table 3.4 compares the incidence of chronic conditions for different population groups. Almost all persons with a permanent disability report the presence of a chronic health condition. Rates are also high among social assistance recipients and single parents.

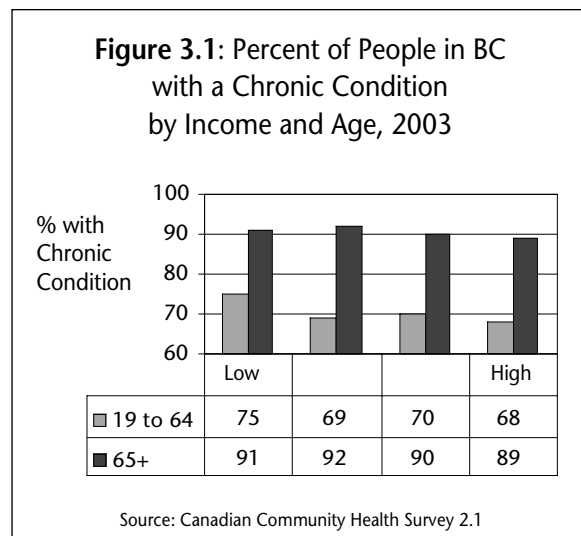


Table 3.3: Demographic Groups and Chronic Disease, 2003 (BC)

		Percent Reporting Chronic Conditions
Gender	Male	66.6
	Female	73.3
Age	Under 65	66.4
	Over 65	90.6
Marital Status	Married	72.7
	Widowed	91.7
	Separated	79.2
	Divorced	79.9
	Single	58.7
Education	Less than Secondary	83.7
	Secondary Grad	66.7
	Other Post-Secondary	72.5
	Post-Secondary Grad	69.4

Source: Canadian Community Health Survey 2.1

Table 3.4: Population Groups and Chronic Disease, 2003 (BC)

	Percent Reporting Chronic Conditions
Aboriginal Persons	75.3
Immigrants	64.6
Single Parents	78.8
Working Poor	72.3
Social Assistance Recipients	86.6
Unable to Work Because of Disease/Disability	98.4
Working Mothers	65.8
Unemployed and Looking for Work	65.6
Children 12 to 19 in Single-Parent Families	58.8
Children 12 to 19 in Two-Parent Families	52.9

Source: Canadian Community Health Survey 2.1

Conclusions

Most British Columbians experience some form of chronic health problem. VIHA's rates are somewhat higher than the provincial average due to high rates in the North and South Island HSDAs.

There is a socio-economic gradient apparent in the prevalence of chronic conditions, and the gradient is most pronounced among people aged less than 65. It appears, therefore, that people at lower levels of the income gradient are more likely than those at higher levels to develop chronic conditions at a younger age. The gradient applies to most, but not all, of the prevalent chronic conditions in the province.

Given the importance of the socio-economic gradient to the distribution of chronic conditions, it is not surprising to find higher rates of chronic disease among groups known to experience higher levels of poverty, such as persons with permanent disabilities, social assistance recipients, single parents and aboriginal persons.



CHAPTER 4

Health Status: Activity Restrictions and Disabilities

Almost 200,000 VIHA area residents are “sometimes” or “often” restricted in their activities because of a chronic health condition. This represents almost 34 percent of the population aged 12 and over, a rate significantly higher than the provincial rate of 27.3 percent.

The causes of activity restrictions and disabilities are varied. According to the CCHS (Table 4.1), 34 percent of activity restrictions among VIHA area residents were caused by disease or illness, and accidents or ageing accounted equally for another 38 percent.

Activity Restrictions in Health Service Delivery Areas

Residents in the Central Island reported the highest rate of activity limitations, almost 35 percent. The North Island reported the lowest rate at just over 31 percent (Table 4.2).

The Socio-Economic Gradient and Activity Restrictions

As shown in Figure 4.1, activity restrictions show a strong economic gradient with substantially higher rates in the lower income quartile.

At the most severe end of the disability spectrum, persons who are permanently unable to work because of a health problem receive social assistance. In September 2005, almost 12,000 residents of the VIHA area were living on social assistance due to disability. At 1.66 percent, this rate is slightly higher than the provincial average.



Table 4.1 Causes of Activity Restrictions Among VIHA Residents, 2003

Cause	%
Disease or Illness	34
Accidents	19
Ageing	19
Working Conditions	11
Existed at Birth	7
Emotional/Mental/ Substance Abuse	4
Other	7

Source: Canadian Community Health Survey 2.1

Table 4.2: Activity Restrictions in Health Service Delivery Areas, 2003

	Percent Reporting Activity Limitation
South Island	33.7
Central Island	34.7
North Island	31.1

Source: Canadian Community Health Survey 2.1

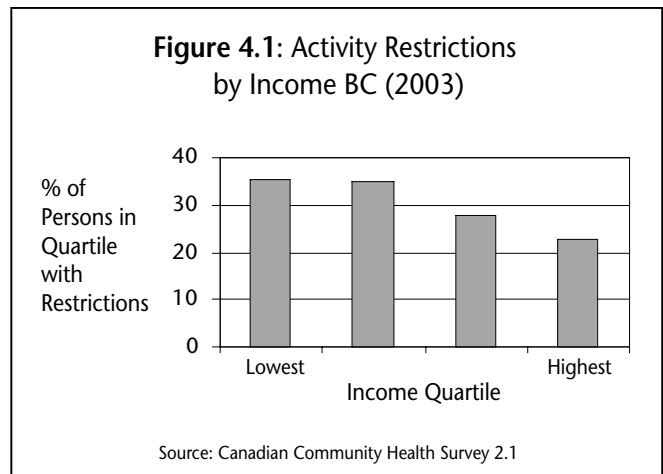


Table 4.3: Persons Receiving Social Assistance for Disabilities in Local Health Areas, 2005

	Number of Persons	Percent of Population
Lake Cowichan	148	2.29
Greater Victoria	4571	2.15
Alberni	666	2.04
Nanaimo	2015	2.02
Cowichan	929	1.69
Campbell River	652	1.59
Courtenay	973	1.58
West Vancouver Island	35	1.45
Qualicum	546	1.31
Gulf Islands	179	1.19
Sooke	604	1.01
Ladysmith	172	.99
North Vancouver Island	125	.89
Saanich	379	.6
VIHA	11,994	1.66
BC	58923	1.38

Source: BC Stats

There was substantial variation among the LHAs, with Lake Cowichan, Victoria, Alberni and Nanaimo reporting the highest rates of social assistance due to disability (Table 4.3).

What Groups Report Higher Rates of Activity Restrictions?

Table 4.4 compares rates of activity restriction for different demographic groups. The rate of activity restriction among males and females is very similar. Age, however, is an important factor, with people 65 and older reporting rates more than double those of people under the age of 65. People who are widowed, divorced, or have less than secondary school education report higher rates of activity limitations.

Table 4.5 compares rates of activity restriction for different population groups. Single parents, social assistance recipients and persons who are unable to work for reasons of disability report high levels of activity restrictions. Notably, children in single-parent families are more likely to report activity restrictions than children in two-parent families.

Table 4.4: Demographic Groups and Activity Restrictions, 2003 (BC)

		Percent Reporting Activity Restrictions
Gender	Male	27.7
	Female	26.9
Age	Under 65	23.4
	Over 65	55.3
Marital Status	Married	27.6
	Widowed	57.2
	Separated	35.1
	Divorced	40.8
	Single	18.8
Education	Less than Secondary	46.9
	Secondary Grad	27.4
	Other Post-Secondary	28.8
	Post-Secondary Grad	25.3

Source: Canadian Community Health Survey 2.1

Conclusions

Activity restrictions illustrate the two-way relationship between health status and socio-economic determinants. Activity limitations can restrict an individual's employability and, consequently, affect income potential. At the extreme, a disability can result in low incomes and reliance on social assistance. Disabilities can also contribute to social isolation by limiting a person's opportunity to participate in the community. These social determinants, in turn, can lead to further health problems, which can exacerbate the original disability or introduce other limitations into the individual's lifestyle.

Table 4.5: Population Groups and Activity Restrictions, 2003 (BC)

	Percent Reporting Activity Restrictions
Aboriginal Persons	29.9
Immigrants	24.5
Single Parents	55.4
Working Poor	23.4
Social Assistance Recipients	52.7
Unable to Work Because of Disease/Disability	80.0
Working Mothers	15.4
Unemployed and Looking for Work	23.3
Children 12 to 19 in Single-Parent Families	19.7
Children 12 to 19 in Two-Parent Families	14.9

Source: Canadian Community Health Survey 2.1

CHAPTER 5

Health Status: Self-Rated Health

In 2003, 61 percent of VIHA area residents reported enjoying good to excellent health, and 72 percent reported good to excellent mental health. On both measures, VIHA rates were comparable to provincial rates of 60 and 71 percent, respectively.

Table 5.1 shows no significant variation in health status or mental health among VIHA's three HSDAs .

Table 5.1: Health Status in HSDAs 2003

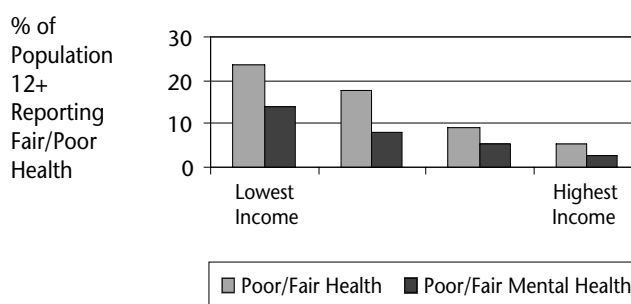
	% of Population 12 and over With Fair/Poor Health Status	% of Population 12 and over With Fair/Poor Mental Health Status
South Island	13.6	6.4
Central Island	12.1	7.4
North Island	11.9	6.4

Source: Canadian Community Health Survey 2.1

The Socio-Economic Gradient and Self-Rated Health

Figure 5.1 compares physical and mental health status against income levels (CCHS 2.1). Both measures of self-reported health show a strong relationship with income. Persons in the lowest income quartile are four times as likely to report fair or poor health as those in the highest quartile. The gap in self-reported mental health is even wider, with lowest income earners almost six times as likely to report poor mental health as highest income earners.

Figure 5.1: Self-Reported Health Status and Income, BC (2003)



What Groups Report Lower Levels of Health?

Table 5.2 compares self-rated health status for different demographic groups. Females are slightly more likely to report poor physical and mental health than males. Not surprisingly, age is an important determinant of self-rated physical health, although it does not appear to be a factor in self-rated mental health. Widowed respondents are significantly more likely to report poor physical health but their rating of mental health is similar to the rest of the population.

Separated and divorced persons reported substantially higher rates of poor physical and mental health.

Table 5.2: Demographic Groups and Self-Reported Health Status, 2003 (BC)

		% of Population 12 and over With Fair/Poor Health Status	% of Population 12 and over With Fair/Poor Mental Health Status
Gender	Male	10.4	5.8
	Female	12.0	6.4
Age	Under 65	8.6	6.1
	Over 65	25.8	6.1
Marital Status	Married	10.6	5.1
	Widowed	26.5	6.6
	Separated	16.2	13.3
	Divorced	19.4	12.4
	Single	7.9	6.2
Education	Less than Secondary	31.7	9.7
	Secondary Grad	11.9	7.1
	Other Post-Secondary	13.9	7.6
	Post-Secondary Grad	8.6	5.2

Source: Canadian Community Health Survey 2.1

Table 5.3: Population Groups and Self-Reported Health Status, 2003 (BC)

	% of Population 12 and over With Fair/Poor Health Status	% of Population 12 and over With Fair/Poor Mental Health Status
Aboriginal Persons	15.2	9.4
Immigrants	13.2	6.8
Single Parents	15.5	8.7
Working Poor	10.1	8.1
Social Assistance Recipients	37.4	24.7
Unable to Work Because of Disease/ Disability	60.8	38.2
Working Mothers	4.4	3.8
Unemployed and Looking for Work	12.1	10.1
Children 12 to 19 in Single-Parent Families	7.7	5.4
Children 12 to 19 in Two-Parent Families	5.6	5.1
Source: Canadian Community Health Survey 2.1		

There is a strong educational gradient apparent for both attributes, as persons with less than secondary education reported poorer physical and mental health.

Table 5.3 compares self-rated health status for different population groups. Social assistance recipients and persons with permanent disabilities reported unusually high rates of poor physical and mental health. Aboriginal persons and single parents reported relatively high rates on both measures. Persons who were unemployed and looking for work were more likely than average to report poor or fair mental health, but their self-rating of poor or fair physical health was not elevated.

Conclusions

There was relatively little geographical variation for self-reported physical and mental health. The VIHA rate was close to that of the province as a whole, and there was only limited variation among the three HSDAs. Unfortunately, there was no data available to support comparisons among LHAs and it is probable that more variation would exist at this smaller geographical level, given the variation in mortality which was reported in earlier chapters of this report.

Within the population, groups most likely to report poor health status include individuals who are disabled, aboriginal, unemployed, social assistance recipients, separated or divorced.



CHAPTER 6

Health Status: Communicable Diseases

Despite improved prevention and control of communicable diseases over the past century, many have shown an increasing propensity to resurge in recent years. Some show higher rates of concentration among marginalized groups, such as intravenous drug users and sex-trade workers; and it is within these groups that the social determinants yield the greatest impact. Diseases such as tuberculosis, hepatitis C and sexually transmitted infections (STIs), such as HIV-AIDS, are particularly prevalent in these groups compared with the rest of the population.

This chapter summarizes the occurrence of communicable diseases on Vancouver Island during the past five years. The data are based on communicable disease reports made to public health officials on Vancouver Island as required under the Health Act, and which are recorded in the Public Health Information System (iPHIS).

The reporting rate for hepatitis C has been higher in Vancouver Island North than in the other two HSDAs and the province as a whole.

Hepatitis C infections are most commonly associated with illicit use of injection drugs. The reporting rates of HIV were considerably higher for Vancouver Island South than the Central or North Island. Injection drug users account for the majority of new HIV cases, followed by heterosexual contact. Chlamydia STI rates were higher for Vancouver Island than the province as a whole, with the highest rate being in Vancouver Island North. VIHA's gonorrhea STI rates were lower than the provincial rate.

VIHA's rates of new active tuberculosis cases were comparable among the HSDAs, and about half of the provincial rate. On the other hand, rates of chemoprophylaxis were higher in Vancouver Island South than the other HSDAs and the province.

Table 6.1 Selected Communicable Diseases HSDAs and BC, 2001–2005

	5-Year Rate Per 100,000			
	North	Central	South	BC
Hepatitis C & Hepatitis C Acute	111.6	100.9	93.7	89.5
Chlamydia	219.6	190.1	197.2	188.4
Gonorrhea	12.1	8.5	13.0	20.1
Infectious Syphilis	0.3	0.7	0.7	5.9
Non-Infectious Syphilis	0.7	0.8	1.2	2.0
HIV - 5 yr data 2001-2005	3.8	5.1	10.8	10.3
Positive Tuberculosis Skin Tests	55.2	42.3	77.0	90.2
Chemoprophylaxis for TB	15.2	13.9	39.9	26.9
Active Cases of TB	3.1	2.2	3.3	7.6

Sources: CD Data from BCCDC, Impromptu Web Reports, obtained March 7, 2006
Population estimates for rates from BC Stats, P.E.O.P.L.E. Projection 30, released May 2005

Conclusions

Among the communicable diseases known to be more prevalent among marginalized groups, such as injection drug users and sex-trade workers, there were substantially higher rates reported for hepatitis C and chlamydia. Compared with the province, hepatitis C rates were particularly high in the North and Central Island. Chlamydia rates were higher than the provincial average in all three HSDAs, but most notably in the North Island.



CHAPTER 7

The Social Determinants: Income Distribution and Poverty

It is evident in the previous sections of this report that the income gradient plays an important role in health. Chronic disease, activity limitations and self-rated health all show a strong relationship with income level, a relationship more complex than a simple dichotomy between the “haves” and “have-nots.” In addition, health problems are particularly apparent in population groups who have traditionally experienced higher levels of poverty, such as people who are disabled, unemployed, aboriginal, single parents or social assistance recipients.

Income Distribution and Poverty on Vancouver Island

BC Stats compiles income-related data to develop an overall measure of economic hardship for small geographical areas in BC, including LHAs. Six of the key indicators of economic hardship are presented in Table 7.1. According to 2001 census results, average family incomes among VIHA area residents were below the provincial average for two-parent and single-parent families. It is notable, however, that the proportion of families in the VIHA area who fall below the Statistics Canada low income cut off point—and are therefore classified as “low-income”—is lower than for the province as a whole. So, although average incomes are slightly lower, this does not reflect a larger proportion of low-income families in the VIHA area.

Table 7.1 includes one measure of income equality. This measure shows the percentage of the area’s total income earned by people in the lower half of the income distribution. The higher the percentage, the greater the degree of income equality in an area. VIHA’s rate is slightly higher than the provincial average, suggesting that the VIHA service area has a slightly more equitable distribution of incomes than the province as a whole.

The last two indicators in Table 7.1 are measures of poverty in two vulnerable populations—social assistance

recipients, aged 0 to 64, and seniors receiving the maximum entitlement under the guaranteed income supplement (GIS) program. The GIS is used to supplement the income of low-income seniors and, therefore, serves as a measure of economic hardship among elderly people.

Despite the concentration of low income among families in the VIHA area being less than the provincial average, the percentage of the adult population in receipt of social assistance in 2004 was higher than the provincial average. By contrast the percentage of seniors who required the maximum GIS supplement was substantially lower for the VIHA area than for the province as a whole.

Table 7.1: Income Measures For VIHA

	VIHA	BC
Average Income Two-Parent Families (2000)	\$66,633	\$70,033
Average Income Single-Parent Families (2000)	\$31,651	\$33,829
Income Share of Bottom Half of Distribution (2000)	22.8 %	21.6 %
Low-Income Families (2000)	10.5 %	13.9 %
Percent of Persons 0 to 64 on Social Assistance (2004)	5	4.1
Percent of Seniors Receiving Maximum GIS (2004)	1.5	3.5
Source: BC Stats		

Income Distribution and Poverty Within Local Health Areas

Table 7.2 compares income data for VIHA's local health areas. As discussed in the first chapter of this report, there is a substantial degree of economic diversity among LHAs. Only Lake Cowichan ranked in the poorest quartile for concentration of low income families in the population. On the measure of social assistance dependency, however, five LHAs ranked among the most dependent: Cowichan, Nanaimo, Campbell River/West Vancouver Island, Lake Cowichan and Alberni. This is consistent with the relatively high rate of social assistance dependency in VIHA's overall service area. The LHAs reporting the highest levels of income inequality were Victoria, Nanaimo and Campbell River/West Vancouver Island.

Local Health Area	Percent of Families With Low Income 2000	Average Household Income 2000 \$	Percent of Population 0–64 on Income Assistance 2004	Percent of Seniors Receiving Maximum GIS 2004	Percent of Population 19–64 on Employment Insurance 2004	Income Inequality 2000 (% of income in lowest 50% of families)
Saanich	4.1	68782	1.6	.9	2.1	24.3
Sooke	9.1	56715	2.9	1.6	2.9	26.0
Gulf Islands	8.1	47542	3.0	.7	2.2	23.1
Ladysmith	8.8	49871	2.9	1.8	3.3	23.2
Qualicum Beach	9.0	47503	4.0	.8	3.4	23.6
Greater Victoria	10.9	51870	5.1	1.6	2.7	21.7
Courtenay	11.2	49245	5.5	1.5	4.3	24.0
Cowichan	10.5	52498	6.2	1.9	3.2	22.8
Vancouver Island North	7.2	57319	3.1	4.4	5.8	24.1
Nanaimo	14.3	48713	7.6	1.6	3.7	21.8
Campbell River/West VI	13.8	52359	5.7	2.1	5.2	22.0
Lake Cowichan	15.2	45987	8.7	1.7	4.2	23.0
Alberni	13.3	48503	7.1	2.5	5.4	22.1

Cells without shading indicates that the rate fell into the top (best) provincial quartile. Intermediate shading indicates a ranking in the second or third quartile while the darkest shading with white type indicates that the rate fell into the fourth (worst) provincial quartile.
Source: BC Stats

Vancouver Island North emerged from this analysis with a unique profile. It reported higher than average family incomes, low rates of family poverty and social assistance dependency, and relatively high rates of income equality. Yet, it also reported high rates of employment insurance dependency which, in other areas, tends to be associated with lower incomes and higher rates of family poverty. It was also the only LHA that ranked in the poorest quartile for seniors' dependency on the GIS program.

Conclusions

Income distribution is profoundly related to the health status of the population. Although rates of poverty and income distribution for the VIHA area compare favourably with provincial averages, there are a number of LHAs reporting relatively high levels of income dependency and low family incomes. For these LHAs and for the VIHA service area as a whole, the relatively large size of the social assistance population appears to be one of the most important poverty-related determinants, since social assistance recipients are heavily concentrated at the lower end of the income distribution.



CHAPTER 8

The Social Determinants: Early Childhood Experiences

The relationship between the socio-economic gradient of health and health status begins early in life. According to the results from the BC sample of the National Longitudinal Survey of Children and Youth, there is already a substantial gradient in self-reported health status within the child and youth population (see Figure 8.1).

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 related factors that reflect social conditions that affect children during their formative years. BC Stats has compiled data for a number of child-risk indicators, broken out by regions.

As reflected in Table 8.1, VIHA does not compare favourably with the rest of the province for a number of child-risk factors. The VIHA service area shows rates substantially higher than the provincial average for children-in-care, child abuse, teen pregnancies, social assistance dependency, school drop-outs, and juvenile crime rates. The rate for low birth-weight was very close to the provincial average, while the pre-term birth rate was slightly higher.

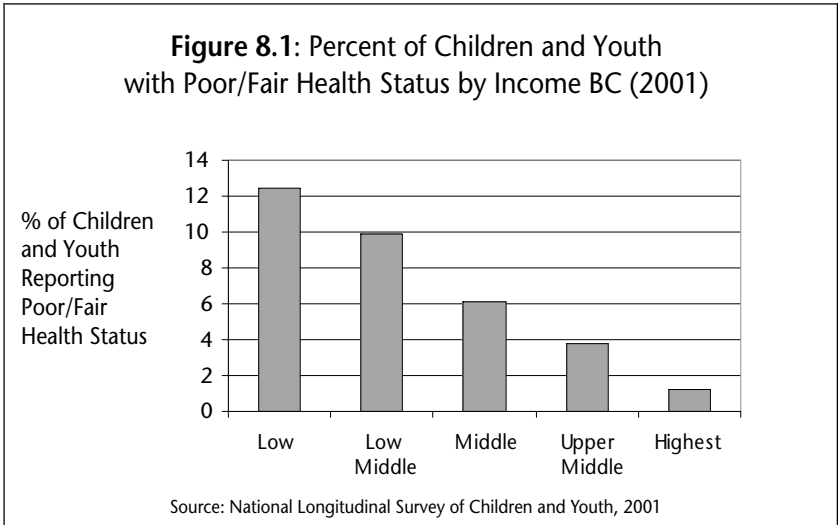


Table 8.1: Child-risk Factors			
	VIHA	BC	VIHA vs BC
Children-in-care/ 1000 (2004)	13	9.8	32% higher
Child Abuse/1,000 (2003)	9	7.6	18 % higher
Teen Pregnancies (per 1,000 females aged 15-17) , 2004	25	20.2	24 % higher
Percent of Children and Youth on Social Assistance (2004)	5.4	4.2	28% higher
Percent of 18-Year-Olds Who Do Not Graduate From School (2002-2004)	29.7	24.9	19% higher
Juvenile Serious Crime Rate/ 1,000 (2001-2003)	8.2	6.4	28% higher
Low Birth Weight Rate Births (2000-2004)	51.8	52.6	2 % lower
Pre Term Birth Rate (2000-2004)	77.8	71.4	9% higher
Source: (1) BC Stats (2) Vital Statistics Annual Report 2004			

BC Stats has developed a set of six indicators to provide a composite measure of child risk for comparing local areas in British Columbia. Table 8.2 shows provincial rankings for the severity of child-risk factors in LHAs. Four LHAs ranked in the lowest quartile on the composite measure: Lake Cowichan, Nanaimo, Alberni and North Vancouver Island.

Table 8.2: Children-at-Risk Indicators for Local Health Areas

LHA	Provincial Rank 1=Worst 78=Best	Percent of Population 0–18 on Social Assistance > 1 Year 2004	Percent of Population 0–18 on Social Assistance < 1 Year 2004	Children-in-Care/ 1,000 2004	Infant Mortality Rate 1999–2003 (/ 1,000 births)	Percent of Grade 4 & 7 Below Standard in Reading 2001–2003	Serious Juvenile Crime Rate 2001–2003 (/1,000 population 12–18)
Greater Victoria	46	3.0	1.7	12.2	4.3	18.6	7.4
Sooke	55	1.7	1.3	12.7	2.8	22.5	7.0
Saanich	73	1.0	.5	7.6	3.0	18.3	3.7
Gulf Island	63	1.9	.9	3.7	6.5	18.4	4.7
Cowichan	22	5	2.6	19.5	3.3	25.2	7.2
Lake Cowichan	7	7.3	2.4	10.7	8.0	29.9	9.2
Ladysmith	47	1.8	.6	14.2	4.2	29.2	5.6
Nanaimo	16	5.3	3.3	14	4.0	25.6	9.5
Qualicum	52	2.7	1.3	8.1	3.3	20.1	8.6
Alberni	1	5.1	3.3	24.3	5.4	33.5	22.6
Courtenay	35	3.8	2.4	8.5	7.8	21.3	4.8
Campbell River	25	3.7	2.5	15.5	3.8	26.8	8.6
North Vancouver Island	8	1.7	1.7	14.3	12.7	37.4	16.2

For each indicator, the shading indicates the quartile placement for the LHAs. Clear cells indicate the LHA ranked in the first (best) quartile on the measure, while the darkest shading with white type stands for the fourth (worst) quartile. The intermediate shading represents the mid-range (second and third) quartiles. The shading in the first column indicates the LHA quartile placement on the composite child-risk indicator.
Source: BC Stats

The best performing LHAs were Saanich and the Gulf Islands, although the latter area reported a high infant mortality rate, which placed it in the worst performing quartile for that measure. Greater Victoria, Sooke and Qualicum were in the mid-range on most indicators, although Victoria and Qualicum ranked in the highest quartile for reading performance and Sooke ranked in the best quartile for low rates of infant mortality.

Ladysmith ranked in the mid-range for the overall index, but fell into the fourth quartile for children-in-care and below standard reading performance. Courtenay and Campbell River also ranked in the mid-range for the composite indicator but fell into the fourth quartile on some measures. In the case of Campbell River, larger concentrations of children on short-term social assistance, and high rates of children-in-care pulled down its total score. Courtenay's overall score was reduced by the short-term social assistance measure and higher-than-average infant mortality.

There was substantial diversity among the poorest performing areas—Lake Cowichan, Nanaimo, Alberni and North Vancouver Island. All of these areas, except North Vancouver Island, reported relatively high concentrations of children on social assistance. Lake Cowichan fell into the fourth quartile for two of the remaining four indicators—infant mortality and poor reading performance. Nanaimo fell into the lowest

quartile for only one other measure, children-in-care.

Alberni, which had the highest child-risk score in the province, ranked in the lowest quartile for all measures except infant mortality. North Vancouver Island, which had the eighth worst composite score in the province, actually scored in the best quartile for social assistance performance. Its poor overall performance was due to poor scores on children-in-care, infant mortality, reading performance and juvenile crime.

Conclusion

Early childhood experience is a critical determinant of population health status, and VIHA did not perform well on a number of child-risk factors reported by BC Stats. The poor performance for VIHA's service area is largely attributable to low scores in four LHAs, but there is considerable variation in individual risk factors among those areas. Social assistance dependency and the proportion of children in the care of the child protection system stand out as the factors with the greatest degree in common among the poorest-performing LHAs. All of these results suggest that population health strategies need to address early childhood experiences as a priority.



The Social Determinants: Social Support and Inclusion

During the past two decades, researchers have struggled to understand the dynamics of the socio-economic gradient of health. Their research has identified social inclusion—the extent to which people have social supports available to them and feel part of their community—as a critical determinant of health. These protective factors act as powerful buffers against the effects of stress on health.

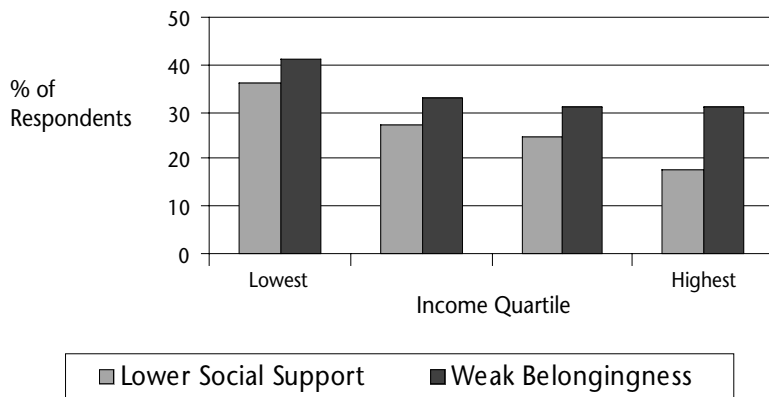
In BC, social support and sense of belonging show slightly different relationships with income. The most

pronounced gradient occurs in social support, while the gradient in community belongingness is less pronounced in the higher income quartiles.

The 2001 CCHS 1.1 included a measure of social supports for the BC population. No data has been collected on social supports subsequent to the CCHS 1.1, so the results of version 1.1 were used in Figure 9.1.

The rest of this section focuses on community belongingness in BC. The results of the 2003 CCHS 2.1 include measures of belongingness for BC’s population, but not measures of social supports. For the purposes of this report, therefore, we are using community belongingness as the principal indicator of social inclusion.

Figure 9.1: Percent of Population Reporting Lower Social Supports and Weaker Community Belongingness, BC



Source: Canadian Community Health Survey 1.1 and 2.1

South Vancouver Island	33
Central Vancouver Island	32
North Vancouver Island	24
VIHA	31
BC	32
Source: Canadian Community Health Survey 2.1	

Community Belongingness in BC

Thirty-one percent of the VIHA respondents to the CCHS reported having a weak or very weak sense of belonging to their community. This figure is very close to the provincial average of 32 percent. There is, however, some variation among VIHA’s three HSDAs. There appears to be a significantly stronger sense of belonging among residents of North Vancouver Island than elsewhere. (Table 9.1)

What Groups Experience Lower Rates of Community Belongingness?

As reflected in Table 9.2 there is substantial variation in sense of belongingness among social groups. Almost half of respondents who are permanently unable to work, and over 40 percent of social assistance recipients and unemployed persons reported low levels of belongingness. The fact that the working poor also reported higher rates of alienation from their communities suggests employment status is not the only factor at work in creating feelings of social exclusion. Income appears to be an important force. The results pertaining to marital groupings are also interesting. Widows were less likely to report weak feelings of belongingness than the population as a whole, and separated persons were substantially less likely than divorced persons to report weak belongingness. Education emerged as an important factor, once again, with relatively high feelings of alienation reported by persons with less than secondary school education.

Conclusions

The majority of VIHA residents feel a sense of belongingness to their communities and, with the exception of North Vancouver Island, VIHA's results are comparable to the provincial rate. Residents of North Vancouver Island appear to enjoy a higher sense of social inclusion.

Significant population groups in BC that experience high rates of social exclusion include people who are unable to work, unemployed, divorced, or social assistance recipients. It is noteworthy that most of these groups were also identified earlier in this report as being vulnerable to higher rates of poverty and health problems.

Table 9.2: Community-Belongingness within Selected Population Groups, BC 2003

	Percent with Weak Sense of Belongingness
Aboriginal Persons	35
Immigrants	35
Persons with Less than Secondary School Education	36
Single Parents	35
Persons who are Permanently Unable to Work	48
Unemployed and Looking for Work	42
Retired persons	26
Social Assistance Recipients	41
Working Poor	39
Working Mothers	29
Widowed persons	27
Separated persons	33
Divorced	40
Total BC Population 12 and Over	32

Source: Canadian Community Health Survey 2.1



CHAPTER 10

Who is Affected by the Gradient of Health?

The previous sections of this report have suggested that poor health is more prevalent among people most likely to experience poverty: the unemployed, disabled persons and social assistance recipients. However, it is important to recognize that the gradient of health runs through all groups in our society. To demonstrate this, we analyzed the CCHS for BC as a whole because sample-size limitations prevented a separate analysis for

VIHA. Table 10.1 compares self-reported health status for different population groups.

The message from this table is remarkably consistent. The income gradient of health is present for all population groups. It affects males and females, the elderly and the non-elderly. It is present among employed persons and unemployed persons, among the most educated and the least educated members of our society. It is present in the immigrant and the aboriginal populations. It can be found in the disabled and able-bodied populations. Some groups have poorer levels of health across the gradient but, in all cases, persons in the higher income quartile are less likely than persons in the lowest income quartile to report poor health.

It is also important to recognize the income gradient in the utilization of health services. There is a clear gradient in the probability of being hospitalized, the number of days-of-care received and the use of physician services (Table 10.2).

Table 10.1: Percent Reporting Poor or Fair Health By Income Quartile for Selected Groups, BC 2003

Dimension	Group	Income Quartile			
		Lowest	Low Middle	Upper Middle	Upper
Sex	Male	23.6	17.1	9.1	4.5
	Female	23.3	18.1	9.3	6.0
Age	Under 65	20.5	13.3	7.3	4.4
	Over 65	36.5	30.3	19.6	16.1
Employment	Working Population	10.1	9.2	5.2	3.4
	Unemployed and Looking	12.3	21.6	11.7	4.7
	Permanently Unable to Work	73.2	66.0	53.1	25.3
Education	Less than Secondary	32.3	27.5	12.4	7.1
	Post-Secondary Grad	18.0	12.9	8.4	4.0
Ethnicity	Immigrants	20.3	18.6	10.6	4.5
	Aboriginal	29.1	21.5	12.7	5.9
Disability	Activity Restricted Often	59.3	48.9	32.3	24.0
	Activity Restricted Never	11.2	7.2	4.1	2.4

Source: Canadian Community Health Survey 2.1

Table 10.2 Health Care Utilization By Income Quartile, BC 2003

Health System use in Previous 12 Months	Lowest	Lower Middle	Upper Middle	Upper
Overnight Hospital Patient	11.4	9.5	8.0	5.6
Average No. of Nights*	7.9	8.5	6.4	5.8
Average Family Physician Contacts	5.1	4.4	3.9	3.2

* Among those who had been an overnight patient

Source: Canadian Community Health Survey 2.1

Conclusions

The relationship between income and health is remarkably consistent across social and demographic groups in BC. It is not a phenomenon that is reserved for vulnerable groups. Even among the best-educated members of our society, there is a pronounced income gradient in health status. It is not surprising, therefore, that income is also a powerful predictor of health care utilization. Persons at the lower end of the income spectrum are more likely to be admitted to hospital, stay longer, and have more physician contacts during the course of a year. As a result, the gradient has very real implications for the health care system.



Understanding the Social Determinants

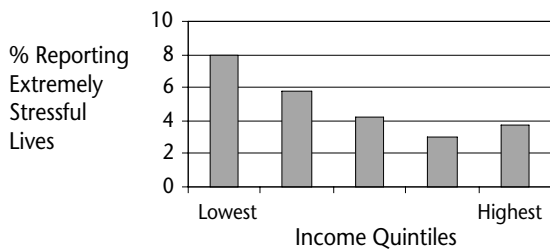
The link between the social determinants and health is a two-way street. In one direction is a host of health conditions that can affect a person's position on the social hierarchy—physical disabilities, injuries, learning disabilities, developmental disorders, and mental illnesses ranging from schizophrenia to depression. All these conditions can challenge a person's capacity to participate in the community's social and economic environment. The solutions to these problems lie in prevention, and in effective efforts that enable people affected by these conditions to participate more fully in the opportunities afforded by their communities.

In the other direction, one's position on the social hierarchy can have a profound effect upon one's state of health, and stress appears to be the underlying force that propels this relationship. There are various ways in which stress affects our health status and interacts with the social determinants. Physiologically, stress dampens the effectiveness of our immune system and leaves us vulnerable to a host of diseases. It affects our cardiovascular health and our endocrine system. It can engender feelings of irritability and hostility, which damage our social relationships and contribute to family dysfunction. Stress contributes to such unhealthy behaviours as drug and alcohol abuse. Stress can also be passed from mother to child. There is a solid body of evidence that

demonstrates stress during pregnancy can contribute to low birth weight which, in turn, has been linked to a variety of disorders in childhood and long-term cardiovascular disease in adulthood.

When people are asked to report on the amount of stress in their lives, the proportion who report that their lives are “extremely stressful” follow the income gradient, except in the highest income groups. In Figure 11.1, results from the CCHS show the proportion of people in BC who reported extremely stressful lives was highest in the lowest income quintiles, but the rates increased between the fourth and fifth quintiles. It is important to note that many of the causes of stress are qualitatively different between upper and lower income groups. At the upper end of the income spectrum, stresses are often related to work pressures, time management

Figure 11.1: Percent Reporting Extremely Stressful Lives by Income, BC (2003)



Source: Canadian Community Health Survey 2.1

and challenges of balancing responsibilities of work and home. At the low end of the income spectrum, people also face these challenges in addition to other material stresses, such as putting food on the table, paying next month's rent, and providing their children with some of the opportunities upper-income families take for granted.

In a recent literature review, Eric Bruner and Michael Marmot succinctly summarized the relationship between stress and income:

*“The point is to dispel a common misconception that ‘stress’ is predominantly a health risk for senior managers, stockbrokers, and others in positions of corporate and public responsibility. Acute stress in such contexts provides challenges which often will be exciting, stimulating and, after the event, emotionally and intellectually satisfying...high effort linked to high reward is generally health promoting. In contrast, ill health is associated with prolonged exposure to psychological demands when possibilities to control the situation are perceived to be limited and chances of reward are small.”*⁶

⁶ Bruner, E. and Marmot, M. Social organization, stress, and health. In Marmot, M. and Wilkinson, R. Social Determinants of Health. London: Oxford University Press, 2006, p. 13.

The relationship between stress, income and health is not only a function of higher levels of extreme stress at the lower end of the income spectrum. It also appears to be true that the nature of the stress experiences at lower incomes is more destructive to an individual's health. The stresses that cause ill health are not the short-term stresses that come from facing challenges and accomplishing goals. The stresses that cause ill health are the chronic, long-term stresses.

People at the lower end of the income distribution are also more likely to lack the social supports and material means to buffer the effects of stress on their health. They are more apt to bear the full brunt of the stresses because of a diminished capacity to invoke the protective factors that higher income earners can afford.

Not surprisingly, the analyses presented in this report highlight the importance of income as a determinant of health. The influence of income is multi-dimensional. It reflects people's employment status and the type of job they maintain. It determines the quality of housing and neighbourhood in which a family resides. It affects a family's opportunity to participate in recreational pursuits and other health-enhancing behaviour. Perhaps most importantly, it affects how people are perceived and treated by other members of their community.

One of the more disturbing trends of the past few years has been an increase in the rate of poverty among children in BC. Between 2000 and 2003, the rate of poverty increased from 14 percent to over 18 percent.⁷ Given the strong relationship between poverty and health status, this trend does not bode well for the future health status of our population. This trend is particularly concerning when considered in conjunction with the other primary health trend of recent years—a substantial increase in obesity within the population.⁸ These two concurrent trends pose a challenge to the continued improvement of our population health status.

In developing strategies to address the social determinants, there are interesting lessons to be drawn from our growing understanding of the developmental pathways of disadvantaged children. While it is true that a substantial proportion of children who grow up in disadvantaged environments develop physical, social and emotional problems, it is not true of all of them. Significant numbers of these children grow up to be healthy adults, living in secure financial circumstances with supportive social relationships. The notion of "resiliency" has been coined to describe this phenomenon. Resiliency comes from a host of sources, not the least of which is the child's community. Positive mentors, supportive schools, and opportunities to participate in activities that allow children to test their interests and develop a sense of competency, go a long way in counteracting the affects of a disadvantaged childhood.⁹

These lessons from the growing body of research on childhood resiliency, and our increasing knowledge of the dynamics of social inclusion and income, have led to a fundamental understanding of health. That is, the kind of communities that we develop is a more important determinant of the health status of the population than the kind of health care system we construct. Our growing understanding of the social determinants has brought us to this place. Whether or not we are willing to act on this knowledge, with the kind of comprehensive collaborative effort required to invoke change, remains to be seen. It is probably true, however, that the success of the health system, in responding to the needs of our aging and increasingly overweight population, will depend upon our success in mounting this effort.

⁷ Statistics Canada. Income Trends In Canada 1980-2003. Cat # 13F0022XCB

⁸ Canadian Population Health Initiative, Improving the Health of Canadians: Promoting Healthy Weights. February 2006

⁹ Margaret Norrie McCain and Fraser Mustard. Early Years Study: Reversing the Real Brain Drain. Commissioned by the Province of Ontario, 1999.

APPENDIX

DATA SOURCES AND ANALYSIS

Figure 1.1	Percent of persons aged 12 and over who rate their health as poor or fair by income quartile	Analysis of Canadian Community Health Survey 2.1 Public Use Microdata File by PHSU staff
Table 1.1	Health Status and Economic Hardship in BC Local Health Areas	Life expectancy and infant mortality rates from BC Stats and standardized mortality rate from Vital Statistics. LHAs were grouped into quartiles, based on their score on the BC Stats Economic hardship indicator. Analysis by PHSU staff.
Table 1.2	The Income Gradient and Social Determinants of Health in VIHA Service Area	Analysis of Canadian Community Health Survey 2.1 Public Use Microdata File by PHSU staff
Table 1.3:	The Socio-economic Health of Local Health Areas in Vancouver Island	BC Stats Regional Socio-economic indicator http://www.bcstats.gov.bc.ca/data/sep/choose_i.asp
Table 1.4:	Quartile Placement of Local Health Areas on Components of Socio-economic Indicator	BC Stats Regional Socio-economic indicator http://www.bcstats.gov.bc.ca/data/sep/choose_i.asp
Table 2.1	Life Expectancy at Birth by Local health Area	Five-year average life expectancy is from BC Stats
Table 2.2	Standardized Mortality Ratios	Five-year average standardized mortality rates are from Vital Statistics Annual Report 2004 http://www.vs.gov.bc.ca/stats/annual/2004/index.html
Table 2.3	Mortality in VIHA Service Area 2000–2004	Cause-specific standardized mortality rates are from Vital Statistics Annual Report 2004 http://www.vs.gov.bc.ca/stats/annual/2004/index.html
Table 2.4:	Local Health Areas With Significantly Higher Standardized Mortality	Five-year average standardized mortality rates are from Vital Statistics Annual Report 2004 http://www.vs.gov.bc.ca/stats/annual/2004/index.html
Figure 2.5	Infant Mortality Rate 2000–2004	Five-year average infant mortality rates from Vital Statistics Annual Report 2004 http://www.vs.gov.bc.ca/stats/annual/2004/index.html
Table 2.5	Infant Mortality Rates by Local Health Area 1999–2003	BC Stats
Table 3.1	Chronic Conditions in VIHA and BC, 2003	Analysis of Canadian Community Health Survey 2.1 Public Use Microdata File by PHSU staff
Table 3.2	Prevalence of Chronic Conditions by Health Service Delivery Area , 2003	Analysis of Canadian Community Health Survey 2.1 Public Use Microdata File by PHSU staff
Figure 3.1	Percent of Persons With Chronic Condition by Age and Income 2003, BC	Analysis of Canadian Community Health Survey 2.1 Public Use Microdata File by PHSU staff Provincial-level analysis was carried out because the size of the VIHA sample would not support a VIHA-level analysis
Table 3.3	Demographic Groups and Chronic Conditions 2003, BC	Analysis of Canadian Community Health Survey 2.1 Public Use Microdata File by PHSU staff Provincial-level analysis was carried out because the size of the VIHA sample would not support a VIHA-level analysis
Table 3.4	Population Groups and Chronic Conditions 2003, BC	Analysis of Canadian Community Health Survey 2.1 Public Use Microdata File by PHSU staff
Table 4.1	Causes of Activity Restrictions Among VIHA Residents Aged 19 to 65	Analysis of Canadian Community Health Survey 2.1 Public Use Microdata File by PHSU staff
Table 4.2	Activity Restrictions by Health Service Delivery Area, 2003	Analysis of Canadian Community Health Survey 2.1 Public Use Microdata File by PHSU staff

Figure 4.1	Activity Restrictions by Income in BC 2003	Analysis of Canadian Community Health Survey 2.1 Public Use Microdata File by PHSU staff Provincial-level analysis was carried out because the size of the VIHA sample would not support a VIHA-level analysis
Table 4.3	Disabled Persons Receiving Social Assistance by LHA , 2005	Special data request to BC Stats
Table 4.4	Demographic Groups and Activity Restrictions in BC 2003	Analysis of Canadian Community Health Survey 2.1 Public Use Microdata File by PHSU staff Provincial-level analysis was carried out because the size of the VIHA sample would not support a VIHA-level analysis
Table 4.5	Population Groups and Activity Restrictions in BC 2003	Analysis of Canadian Community Health Survey 2.1 Public Use Microdata File by PHSU staff Provincial-level analysis was carried out because the size of the VIHA sample would not support a VIHA-level analysis
Table 5.1	Self-reported Health Status by Health Service Delivery Area in VIHA	Percent of population rating physical health and mental health as poor or fair. Analysis of Canadian Community Health Survey 2.1 Public Use Microdata File by PHSU staff
Figure 5.1	Self-reported Health Status and Income in BC, 2003	Percent of population rating physical health and mental health as poor or fair. Analysis of Canadian Community Health Survey 2.1 Public Use Microdata File by PHSU staff Provincial-level analysis was carried out because the size of the VIHA sample would not support a VIHA-level analysis
Table 5.2	Demographic Groups and Self-reported Health Status in BC 2003	Percent of population rating physical health and mental health as poor or fair. Analysis of Canadian Community Health Survey 2.1 Public Use Microdata File by PHSU staff Provincial-level analysis was carried out because the size of the VIHA sample would not support a VIHA-level analysis
Table 5.3	Population Groups and Self-reported Health Status in BC 2003	Percent of population rating physical health and mental health as poor or fair. Analysis of Canadian Community Health Survey 2.1 Public Use Microdata File by PHSU staff Provincial-level analysis was carried out because the size of the VIHA sample would not support a VIHA-level analysis
Table 6.1	Selected Communicable Diseases HSDAs and BC, 2001–2005	Rates calculated by PHSU staff based on data from BC Centre for Disease Control
Table 7.1	Income Measures for VIHA	All indicators are from BC Stats http://www.bcstats.gov.bc.ca/data/sep/lha/lha_main.asp
Table 7.2	Income Measures from Local Health Authorities	All indicators are from BC Stats http://www.bcstats.gov.bc.ca/data/sep/lha/lha_main.asp
Figure 8.1	Percent of Children and Youth With Poor/Fair Health status by Income, BC 2001	Analysis of National Longitudinal Survey of Children and Youth by PHSU staff
Table 8.1	Child-Risk Factors	BC Stats http://www.bcstats.gov.bc.ca/data/sep/ha/ha_main.asp
Table 8.2	Children-at-Risk Indicators by Local Health Area in VIHA	BC Stats http://www.bcstats.gov.bc.ca/data/sep/lha/lha_main.asp
Figure 9.1	Percent of Population Reporting Lower Social Supports and Weaker Community Belongingness by Income in BC	“Lower social support” was defined as the lowest quartile in social support scores in Canadian Community Health Survey 1.1 (2001). Emotional and Information Support scores used in analysis by PHSU staff. “Weaker Community Belongingness” was defined as “weak” or “very weak” feeling of belonging to community in Canadian Community Health Survey 2.1 (2003) In both cases, provincial-level analysis were carried out because the size of the VIHA sample would not support a VIHA-level analysis

Table 9.1	Percent of Persons Reporting Weak or Very Weak Feelings of Belonging to Their community by Health Service Delivery Area in VIHA	Analysis of Canadian Community Health Survey 2.1 Public Use Microdata File by PHSU staff. Provincial-level analysis was carried out because the size of the VIHA sample would not support a VIHA-level analysis
Table 9.2	Community Belongingness Within Selected Population Groups	Analysis of Canadian Community Health Survey 2.1 Public Use Microdata File by PHSU staff. Provincial-level analysis was carried out because the size of the VIHA sample would not support a VIHA-level analysis
Table 10.1	Percent Reporting Poor or Fair Health By Income Quartile for Selected Groups, BC 2003	Analysis of Canadian Community Health Survey 2.1 Public Use Microdata File by PHSU staff. Provincial-level analysis was carried out because the size of the VIHA sample would not support a VIHA-level analysis
Table 10.2	Health Care Utilization By Income Quartile, BC 2003	Analysis of Canadian Community Health Survey 2.1 Public Use Microdata File by PHSU staff. Provincial-level analysis was carried out because the size of the VIHA sample would not support a VIHA-level analysis
Figure 11.1	Percent of Persons Reporting Stressful Lives By Income in BC, 2003	Analysis of Canadian Community Health Survey 2.1 Public Use Microdata File by PHSU staff.

