

**Socio-Demographic and Health Factors Associated with  
Vulnerability to Food Insecurity in Social Assistance  
Recipients**

by

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Department of Nutritional Sciences  
University of Toronto

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# Socio-Demographic and Health Factors Associated with Vulnerability to Food Insecurity in Social Assistance Recipients

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## **Abstract**

While recipients of social assistance have been consistently identified as highly vulnerable to food insecurity, there is still variation in food security status among this population. Our objective was to examine how provincial social assistance policies, recipients' socio-demographic characteristics, and their chronic disease status relate to their food security status. We used logistic regression models to determine these relationships in a sample of single social assistance adults in the 2011-2012 Canadian Community Health Survey. The odds of food insecurity were higher in Nova Scotia and Saskatchewan compared to Ontario, controlling for socio-demographic factors. Homeowners and respondents with higher incomes appeared to have lower odds of food insecurity. Independent of these effects, having 2 or more chronic conditions, hypertension, or a mental health condition indicated an increased vulnerability. These findings suggest that the needs of social assistance recipients, particularly those chronically ill, are not being adequately met through current benefit structures in order to maintain food security.

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## **Chapter 1 – Introduction**

Food insecurity is defined as the inadequate or insecure access to food due to financial constraints, and is an important population health problem correlated with long-term disease status (Health Canada, 2010). In 2012, 12.6% of Canadian households were marginally, moderately, or severely food insecure (PROOF, 2014).

Sociodemographic factors associated with a greater likelihood of household food insecurity include: low income adequacy (or living in poverty), households that rent their dwelling, lower educational status in the household, and households including a respondent who had declared Aboriginal status (Che & Chen, 2001; Vozoris & Tarasuk, 2003; McIntyre, 2003; Kirkpatrick and Tarasuk, 2008a; Tarasuk & Vogt, 2009; Tarasuk, Mitchell, McLaren, & McIntyre, 2013). In addition to these factors, one of the strongest and most consistent predictors of household food security in Canada is receiving social assistance as the main source of household income (Che & Chen, 2001; Vozoris & Tarasuk, 2003; McIntyre, 2003; Kirkpatrick and Tarasuk, 2008a; Tarasuk & Vogt, 2009; Tarasuk, Mitchell, McLaren, & McIntyre, 2013).

Social assistance in Canada may be granted to any household that has been determined to be unable to provide for their basic needs. Considered the income support program of last resort, social assistance incomes have always been below any established measures of low income used by Statistic Canada, such as the After-Tax Low-Income Cut-Off or the Market Basket Measure (Caledon Institute, 2013). Given that food insecurity is a problem of low income, it is not surprising that the prevalence amongst social assistance recipients was 69.5% in 2012, which was over five times the rate of the general population estimate (PROOF, 2014). However, the legislation governing social assistance is under provincial/territorial jurisdiction, which creates interprovincial variation in policies. Within each province/territory, benefits vary by household type, size, and type of assistance: Income assistance is granted to those experiencing temporary barriers to work, while disability assistance provides long-term assistance for individuals with physical or mental conditions.

Household food insecurity is closely related to health. An analysis of data from the 2007-08 Canadian Community Health Survey revealed that adults who were diagnosed with a chronic health condition, and multiple chronic conditions, had increased odds of experiencing food insecurity, and severe food insecurity, when compared to adults without any conditions. Specifically, food insecurity was associated with asthma, arthritis, back problems, bowel disorders, diabetes, migraines, gastrointestinal ulcers, and mood and anxiety disorders (Tarasuk et al., 2013). The significant associations between food insecurity and this wide range of diseases indicate that this relationship is not specific to each disease, but part of a larger phenomenon. This may reflect the fact that ill health or disability has been associated with difficulty accessing and purchasing food. Likewise, social assistance recipients are on average less healthy than the general population: They are more likely to report poor or fair health, depression, and heart disease (Vozoris & Tarasuk, 2003).

Despite the overall inadequacy of benefits for social assistance recipients, there is a variation across provinces in the food security levels of social assistance recipients. The intent of this study was to identify factors associated with social assistance recipients' heightened vulnerability to food insecurity through the secondary analysis of data from the 2011-12 Canadian Community Health Survey. Specifically, we examined the effects of province of residence, provincial policies regarding social assistance, recipients' socio-demographic characteristics, and their chronic disease status on their food security status.

This study focuses on single adults reliant on social assistance because of the particular vulnerability of this group; single adults account for over 40% of food insecure households in the population (PROOF, 2014). Single adults are more likely to be affected economically by poor health than couples, as they lack the safety net of a second income (Morris, 2005), and once on social assistance, they receive the lowest levels of benefits of any recipient group (Caledon Institute, 2013). Thus it is important to understand how this group is affected by food insecurity, and what factors mitigate or exacerbate their experience of food insecurity while on social assistance.

## **Chapter 2 – Literature Review**

### **2. 1 – Food Insecurity Definition, Measurement, and Experience**

Food insecurity is defined as the “the inability to acquire or consume an adequate diet quality or sufficient quantity of food in socially acceptable ways, or the uncertainty that one will be able to do so” (Davis & Tarasuk, 1994). It is measured via the nationally representative Canadian Community Health Survey (CCHS) using the Household Food Security Survey Module (HFSSM). The HFSSM contains eighteen questions of progressive severity that address the food security situation within the household. Ten of the questions pertain to adults in the household, while the other eight address the experience of children. Based on the number of affirmative responses to both the child and adult questions, Health Canada has devised a classification scheme in which each household is assigned to one of three categories: food secure, moderately food insecure, or severely food insecure (Health Canada, 2010).

Moderate food insecurity corresponds to 2-5 affirmative adult responses or 2-4 affirmative child responses. A moderately food insecure household indicates inadequacy of household food supplies and adjustments to the quality of food consumed. However, there are few or no indications of reduced quantity of food intake (Health Canada, 2007). Severe food insecurity was denoted by  $\geq 6$  affirmative responses to the adult questionnaire or  $\geq 5$  affirmative responses to the child questionnaire. Severe food insecurity is characterized by disrupted eating patterns and quantitative deprivation, also commonly known as hunger (Health Canada, 2007). In 2012, 8.6% of Canadian households were moderately or severely food insecure (PROOF, 2014).

The progressive severity of food insecurity is reflected in the questions posed on the HFSSM, beginning from being uncertain or anxious about running out of food due to the inability to afford more, progressing to making qualitative adjustments in eating patterns, and finally to quantitative restriction of consumption (Health Canada, 2007). This reflects the progression of food insecurity and the actions of individuals in response, which are orderly and remarkably comparable between households (Coates et al., 2006).

The behavioural responses also follow a continuum: firstly, members of food insecure households experience worry or anxiety about being able to provide sufficient food, and thus attempt various strategies to augment their food supply to cope within their constrained resources (Coates et al., 2006). However, if the financial situation continued to deteriorate, the quality of the food supply would be necessarily compromised, followed by the quantity (Coates et al., 2006). Therefore, though coping and budget/financial management skills are beneficial when experiencing less severe financial restriction, there comes a point at which incomes are so constrained that there is no opportunity to compensate (Gorton, Bullen & Murchu, 2009). For example, there is evidence to suggest that women who showed a coping style of taking responsibility for their household food resources reduced the odds of adult hunger, but this statistical significance was lost after food insecurity worsened to include child hunger in the household (Gorton et al., 2009).

American research on food insecurity has found it to be a transient but chronic problem that follows a predictable, cyclical pattern (Seligman, Laraia, & Kushel, 2010a). The sequence of food insecurity corresponds highly with cyclical budget shortages, usually at the end of the month. Though each episode of food may be relatively short, most households at risk for food insecurity alternate between having an adequate food and inadequate food resources several times each year (Seligman et al., 2010a). An estimation of incidence the authors placed this number at approximately seven times each year.

In line with the definitions for moderate and severe food insecurity, most individuals in food insecure households do not seem to have lower absolute energy intakes, as evidence indicates that individuals will attempt to maintain energy intake levels in the face of restricted consumption. This is because the first necessary dietary compromises in diet are qualitative in nature. In order to maintain caloric intake, food insecure households will opt for foods with a high energy density, as defined by dividing energy in kilojoules consumed by the number of grams of food consumed (Bawadi, 2012; Seligman et al., 2010a; Kirkpatrick and Tarasuk, 2008b). While these foods may be less expensive per calorie, the increased caloric

density indicates a poorer quality diet among adults (Seligman et al., 2010a; Sullivan et al., 2010).

There is evidence of compromised food quality by way of poor food and nutritional intake and reduced dietary diversity (Stuff et al., 2004; Bengle et al., 2010). Adults in food insecure households have a lower intake of fruits and vegetables, dairy products, protein, fat, and fiber; (Adams et al., 2003; Kushel, 2006; Kirkpatrick and Tarasuk, 2008a; Gucciardi, 2009; Seligman et al., 2010a) but consume a higher proportion of their energy intake in the form of inexpensive carbohydrates. Adults in food insecure households also tend to have lower levels of micronutrient consumption compared to food secure households. This heightens the risk of nutrient inadequacy, and indeed a high prevalence of nutritional inadequacy has been found across a broad spectrum of nutrients (Adams, 2003; Kirkpatrick and Tarasuk, 2008a; Kirkpatrick and Tarasuk, 2008b; Seligman et al., 2010b).

Given the chronic nature of food insecurity, it is concerning that the nutritional inadequacy associated with food insecurity likely represents long-term dietary intake (Kirkpatrick and Tarasuk, 2008b). This dietary pattern is linked to the development of chronic diseases, a compromise to the immune system and increased susceptibility to infections (Che & Chen, 2001; Seligman et al., 2010). The prolonged association between food insecurity and energy density may impact weight status over time (Kirkpatrick and Tarasuk, 2008b; Bengle et al., 2010). Several studies in Canada and the United States have found significant associations between food insecurity and obesity, but only in women (Che & Chen, 2001; Stuff, 2004; Lyons, Park, & Nelson, 2008; Seligman et al., 2010). This may be directly related to the substitution of energy-rich, nutrient dense foods in order to main caloric intake. Though the reliance on low-cost food makes sense as an economic decision, it is a poor choice in terms of nutrition and obesity prevention (Seligman et al., 2010; Sullivan et al., 2010).

## **2.2 – Food Insecurity in Canada**

### 2.2.1 – Sociodemographic Variables

In Canada, socio-demographic factors associated with a greater likelihood of household food insecurity include: low income adequacy (or living in poverty), households renting as

opposed to owning their dwelling; attaining lower than a post-secondary education, and households including a respondent who had declared Aboriginal status (Che & Chen, 2001; Vozoris & Tarasuk, 2003; McIntyre, 2003; Kirkpatrick and Tarasuk, 2008a; Tarasuk & Vogt, 2009; Tarasuk et al., 2013). Adults under 65 were also more likely than seniors to experience food insecurity (Che & Chen, 2001; Vozoris & Tarasuk, 2003).

Amongst households with children, the prevalence of food insecurity was higher in households with three or more children compared to just one or two (Che & Chen, 2001; Huddleston-Casas, Charnigo, & Simmons, 2008; Gorton, 2009). Compared to two-parent families on the 2012 CCHS, amongst whom the prevalence of food insecurity is 11.7%, households with a single parent have a much higher prevalence of food insecurity. However, this is largely dependent on that adult's gender, as female-led households report almost twice the prevalence of food insecurity compared to male lone parents (34.3% versus 17.2%) (PROOF, 2014). Among childless households, being married or living as a common-law couple seemed to be protective: the prevalence of food insecurity was higher amongst single-person households compared to childless couples on the 2012 CCHS (PROOF, 2014).

### 2.2.2 – Health

#### **Self Rated Health**

Canadian adults in food insecure households reported significantly higher rates of fair or poor self-rated physical, mental, or social health status; and restricted activity or disability compared to food secure households (Che & Chen, 2001; Vozoris & Tarasuk, 2003; Kirkpatrick and Tarasuk, 2008a).

In an analysis of the 2005 CCHS, food insecure individuals were more likely to rate their satisfaction with life as lower and to have a higher self-perceived stress level (Gucciardi et al., 2009). Conversely, reporting poor physical and mental health and high levels of stress was also associated with an increased likelihood of household food insecurity (Gucciardi et al., 2009).

#### **Chronic Conditions**

Adults in food insecure households had a higher likelihood of having been diagnosed with a chronic health condition, and multiple chronic conditions, when compared to food-secure households in Canada (Che & Chen, 2001; Vozoris & Tarasuk, 2003). In an analysis of the 1996-1997 National Population Health Survey, food insecurity was associated with depression, distress, heart disease, diabetes, hypertension, and allergies (Vozoris & Tarasuk, 2003).

In an analysis of the 2007-2008 CCHS, Tarasuk, Mitchell, McLaren & McIntyre (2013) examined the association between adults' chronic health and presence and severity of household food insecurity. Chronic health was measured by the individual diagnoses of 10 chronic conditions addressed on the CCHS with a prevalence above 2%, as well as the overall number of conditions reported by a respondent. Significantly higher odds of food insecurity were found among respondents who had been diagnosed with eight of the ten conditions: asthma, arthritis, back problems, bowel disorders, diabetes, migraines, gastrointestinal ulcers, and mood or anxiety disorders. Amongst food insecure respondents only, those with arthritis, migraines, and mood or anxiety disorders were significantly more likely to experience severe compared to moderate food insecurity.

The number of chronic conditions reported by a respondent also showed a strong dose-response relationship with prevalence and severity of food insecurity, controlling for sociodemographic predictors. In comparison to respondents without any conditions, odds of food insecurity increased from adults with one, two, or 3 or more conditions. In terms of severity of food insecurity, having two or 3+ conditions was associated with significantly higher odds of severe food insecurity compared to moderate. These findings reflect the increased prevalence of chronic conditions as the food security situation in the household progressively deteriorates (Tarasuk et al., 2013).

The significant associations between food insecurity and the wide range of diseases indicate that this relationship is not specific to individual diseases, but part of a larger phenomenon (Vozoris & Tarasuk, 2003). Food insecurity may compound the management of chronic diseases, especially ones that are diet-related, such as diabetes, hypertension, and

cardiovascular disease (Vozoris & Tarasuk, 2003; Gucciardi et al., 2009; Seligman et al., 2010). Conversely, being diagnosed with a greater number of long-term health conditions is associated with a higher likelihood of food insecurity (Gorton et al., 2009).

## **Diabetes**

Diabetes mellitus is the most extensively analyzed disease in relation to food insecurity, as it appears to be strongly associated with food security, which is most evident at the most severe levels of food insecurity (Seligman et al., 2010). Studies amongst various population subgroups, locations, and age demographics concur that the risk of food insecurity is higher among households containing a diabetic member. Conversely, the risk of diabetes is also higher for adults living food-insecure households compared with those living in food-secure households.

As diabetes is a progressively debilitating disease, Gucciardi et al. (2009) analyzed the likelihood of experiencing household food insecurity by age of diagnosis using the CCHS Cycle 3.1. They found that a diabetes diagnosis at 40 years or earlier resulted in a greater likelihood of living in a food-insecure household than those with a later diagnosis – in particular, the likelihood of household food insecurity increased by 4% for each year earlier in life that diabetes was diagnosed. (Gucciardi, 2009) However, this study did not distinguish between Type I or II diabetes. Gucciardi (2009) also found significantly higher rates of household food insecurity among Canadians with diabetes, compared with those without diabetes. Similarly, Galesloot et al. (2012) found a higher prevalence of moderate and severe food insecurity in diabetes patients than in the general Calgary population, despite the fact that in all other respects, these individuals appeared to have the same risk profile.

Individuals with diabetes were also more likely to be food insecure (Fitzgerald et al., 2011; Galesloot et al., 2012). In a US NHANES study of over 5000 adults, Seligman et al. (2010) found that the risk of clinical diabetes was approximately 50% higher in food insecure individuals. Amongst food insecure households, this relationship progressed incrementally with increasing severity of food insecurity. This may be explained by the fact that food insecurity is a highly emotionally and physiologically stressful state, which causes elevated

cortisol stress level that are frequently linked to adiposity. In particular, there is a deposit of visceral adiposity and increased waistline that is a strong risk factor for diabetes (Seligman et al., 2010). However, due to the cross-sectional nature of the data, causation was unable to be established.

A study examining food insecurity and type 2 diabetes among Latinas residing in Connecticut (Fitzgerald et al., 2011) found evidence supporting this relationship. Not only were respondents with diabetes more likely to experience very low food security (78% of diabetics in their sample were moderately or severely food insecure), but those with very low food security were in turn 3.3 times more likely to have Type 2 diabetes compared to those who were food secure or had low food insecurity. This relationship remained significant even after controlling for other predictors/indicators of Type 2 diabetes, such as a high waist circumference, low levels of physical activity, and obesity (Fitzgerald et al., 2011).

Among adults who have been diagnosed with diabetes, being food insecure was associated with inadequate management of their condition, both in terms of dietary and medication regimens (Seligman et al., 2010). Food insecure individuals may skip meals, maintain caloric intake in the form of inexpensive carbohydrates like refined starches, or reduce their total caloric intake (Seligman et al., 2010; Galesloot, 2012). The limited diet quality and quantity of food insecure individuals is problematic, as nutrition is a key component of diabetes management (Galesloot, 2012). The cyclical nature of food insecurity means that daily caloric and carbohydrate intakes may fluctuate greatly in accordance with food availability. Increase of the dietary glycemic load at irregular intervals makes glucose levels unpredictable and thus complicates the development and maintenance of appropriate medication and insulin regiments (Seligman et al., 2010). In terms of medical diabetes self-management, significant associations were observed between food insecurity and the following indicators: poor adherence to blood glucose monitoring, decreased self-efficacy, lowered blood glucose testing adherence, and misuse of insulin or hypoglycemic tablets (Stuff, 2004; Seligman et al., 2010).

Overall, this leads to a deterioration of glycemic control, as measured by mean blood HbA1c levels, with greater or equal to 8% indicating poor glucose control (Ngo-Metzger, 2011; Bawadi et al., 2012). This resulted in an increased frequency of hypoglycemic episodes, which are most likely to be the cause of emergency room visits (Stuff, 2004; Guciardi, 2009; Seligman et al., 2010; Galesloot, 2012). Conversely, hyperglycemia may also result from the inability to afford diabetes-appropriate foods, overconsumption during periods of food adequacy and non-adherence to medication or insulin (Seligman et al., 2010a).

## **Obesity**

U.S. research indicates that food insecurity is linked to obesity and higher cardiovascular risk factors (Stuff, 2004; Bangle, 2010; Seligman & Schillinger, 2010b; Bhargava, 2012). Though it has recently been designated a “disease” by the American Heart Association, obesity itself is not considered a chronic condition, but has nonetheless been significantly associated with numerous diseases like hypertension, diabetes, and heart disease (Adams, 2003). Thus it can be speculated whether obesity is acting as a confounder on the relationship between food insecurity and chronic disease. However, a study using data from NHANES waves 1999 to 2004 showed that even after controlling for BMI, the association between food insecurity and chronic disease was not attenuated, leading to the conclusion that the association was not solely attributable to higher prevalence of obesity among food-insecure women (Seligman et al., 2010a). However, the increased obesity among the food insecure may help explain the proliferation of diet sensitive chronic diseases in this population (Seligman et al., 2010a). For example, severely food insecure individuals reported skipping meals or cutting meal sizes, behaviours that have been linked to both obesity and poor glycemic control (Bawadi et al, 2012).

## **Mental Health**

Mental illnesses fall into two broad classifications: mood disorders, which include depression, manic depression, bipolar disorder, mania and dysrhythmia; or anxiety disorders, such as phobias, obsessive-compulsive disorder and panic disorders (CCHS 2011 – 2012). Compared to their food secure counterparts, Canadians in food insecure households reported higher levels of distress and symptoms of depression, stress, anxiety, social isolation (Che &

Chen, 2001). Adults in food insecure households experiencing hunger had increased odds of reporting a mental health diagnosis compared to food insecure Canadians without hunger. These associations with food insecurity remained significant when analyzing mood or anxiety disorders independently (Muldoon, 2013).

Food insecurity is tightly correlated to low socio-economic status and low income, which are the same risk factors for households known to have a high burden of poor mental health. Mental health appears to play an important part in the food insecurity condition, as it causes individuals in food insecure households to be less able to manage their situation through feelings of stress, anxiety, social isolation, and being overwhelmed (Huddleston-Casas, 2008). Hence the relationship between mental health and food insecurity has best been described as bi-directional, or simultaneously causal/recursive (Huddleston-Casas, 2008).

Within households, mental illness can contribute via two channels towards food insecurity: wage earners may be unable to work due to the effects of their condition; or they may be prevented from working by another household member's illness, especially if that household includes children (Lent, 2009). A study of low-income rural families in New York State found that men whose wives were experiencing depression may have been prevented from working, as they were needed to provide childcare. Likewise, mental health illness in children may make it difficult or prohibitively expensive to find child care, thereby hindering the parents from working (Lent, 2009).

Muldoon et al. (2013) highlighted how this may explain gender inequities in food insecurity, as the association between food insecurity and mental illness is especially strong among women in food insecure households. As women and mothers are most commonly the person in charge of food allocation and expenditure in the household, mental health issues may be compounded by feelings and perceptions regarding self-worth as well as household and family responsibilities. In a study of female-led single parent households in Atlantic Canada below the Low-Income Cut-Off, McIntyre et al. (2003) found evidence of mothers compromising their own food intake in an attempt to keep their children protected from the effects of food insecurity.

The mental health condition most strongly associated with food insecurity is depression. The field of literature on depression is easily comparable, as virtually all studies used the Center for Epidemiological Studies Depression Scale (CES-D) to evaluate signs and symptoms of clinical depression, with a value of 16 as the threshold to indicate high risk of depressive symptoms (Huddleston-Casas, 2008; Lent, 2009; Hromi-Fielder, 2010). The association between depression and food insecurity is relevant and significant for many differing types of population subgroups (Gorton, 2009; Fitzgerald et al., 2011; Muldoon, 2013).

In a 3-year prospective study following 29 low-income women in rural New York State, Lent et al. (2009) found that participants who were food secure at the start of the study were likely to remain so throughout. In addition, those who were food insecure at the first wave experienced a greater fluctuation in their food security status. Interestingly, all of the respondents who remained food insecure were also at risk for depression, while none who became food secure were at risk for depression. In addition, all respondents who were risk for depression at all three waves remained food insecure throughout. Conversely, for those respondents who were never at risk for depression, most were consistently food-secure, while the others, while initially food-insecure, had become food secure by the third wave of the study. While the results of Lent et al. (2009) make a convincing argument for not only the ties between food insecurity and depression, but also for the influence of depression on an individual's ability to manage food insecurity, the study's small sample size ( $n = 29$ ) is a major limitation. In a longitudinal study of maternal depression in a sample of low-income, rural women in 16 U.S. states, Huddleston-Casas et al.(2008) also reported a bidirectional and simultaneously causal relationship between depression and food insecurity ( $n = 413$ ). They concluded that rural women living in low-income households are vulnerable to depression, especially since they are more likely to go undiagnosed.

Siefert et al. (2004) found similar results in their study of two waves of structured interviews of 733 women who were current or recent welfare recipients in an urban Michigan county in 1997 and 1998. The authors measured food insufficiency using the question, "Which of the following describes the amount of food your household has to eat—enough to eat, sometimes

not enough to eat, or often not enough to eat?" Those who answered "sometimes" or "often" were considered food insufficient (Siefert, 2004). Health was measured via global self-rated health and criteria for major depression (using the World Health Organization's Composite International Diagnostic Interview). Other risk factors associated with poor health or food insufficiency were also controlled for.

Respondents who were food insufficient at both waves or only at wave 2 were more likely to report fair or poor self-rated health and major depression than those who did not report food insufficiency at all. However, there were no differences observed between those who were only food insufficient at wave 1, but had become food sufficient at wave 2, compared to those who had never reported food insufficiency (Siefert, 2004).

Those who experienced food insufficiency at both waves or wave 2 only showed a significant and negative association with self-ratings of health at wave 2 when controlling for self-ratings of health at wave 1 (Siefert, 2004). However, when using major depression as the outcome variable, the relationship between reporting food insufficiency at both waves and depression at wave 2 became insignificant once initial depression status was controlled for.

Lastly, reporting food insufficiency at wave 1 only was not significantly associated with depression at any point. However, experiencing depression at wave 1 strongly predicted depressive criteria at wave 2. In addition, women who became food insufficient between waves 1 and 2 were more likely to meet the diagnostic criteria for major depression at wave 2. These findings suggest that recurring and persistent household food insufficiency is a predictor of both self-rated health and criteria for major depression (Siefert, 2004).

## **Oral Health**

The relationship between food insecurity and general health is reflected in oral health status: Muirhead, Quiñonez, Figueiredo & Locker (2009) found that compared to those who were food secure, food insecure individuals reported poorer self-rated oral health and a higher likelihood of perceiving that they needed dental treatment. Indicators of oral health impact included number of teeth, denture status, pain on chewing, or adversely affected sleep or

work. In addition, cost-related barriers to care are observed, as food insecure respondents had twice the likelihood of being unable to afford needed dental care, as well as reporting having relinquished goods or services to pay for dental care. Food insecure respondents also showed a smaller likelihood of practicing preventative care, as they reported only visiting the dentist in response to a problem, and not for regular maintenance (Muirhead et al., 2009).

Dental care in Canada presents an interesting parallel to prescription medications, as both are financed outside of the Canada Health Act by public and private supplemental insurance and out-of-pocket expenditures (Quiñonez & Figueiredo, 2010). The probability of receiving dental care increases amongst respondents who have dental insurance, higher household income, and poorer oral health (Bhatti, Rana, & Grootendorst, 2007). A lack of dental insurance was consistently associated with the worse oral health and dental care outcomes (Batti et al., 2007; Quiñonez & Figueiredo, 2010). Thus the main barrier to accessing care was cost, as professional dental care also represents a competing financial demand (Muirhead et al., 2009; Quiñonez et al., 2010).

Significantly fewer food insecure households enjoyed dental health insurance, which in turn is associated with an inability to pay for dental services (Muirhead et al., 2009). Working poor individuals who do not have dental insurance coverage were more likely to report poorer dental health, visit a dentist only in emergencies, having functionally impaired dentition, and/or being unable to afford needed dental care (Quiñonez & Figueiredo, 2010).

## **HIV/AIDS**

Although its omission from the CCHS prevents a national estimate of the prevalence of HIV/AIDS, there have been several studies with smaller samples examining food insecurity in HIV/AIDS patients. Normén et al. (2005) conducted a cross-sectional study of HIV-positive respondents undergoing antiretroviral therapy as part of the British Columbia HIV/AIDS drug treatment program in 1998 – 1999. For these patients the costs of treatment, antiretroviral therapy, laboratory monitoring, and medical care were fully covered by the BC provincial health care system. However, the rates of food insecurity among this population were still significantly higher, with 48% of respondents reporting experiencing food insecurity, as measured by a modified version of the validated Radimer/Cornell

questionnaire. In addition, 21% of respondents reported food insecurity with hunger, also known as severe food insecurity. Other risk factors for food insecurity in patients with HIV/AIDS included a prior history of recreational injection drugs and/or alcohol abuse, unstable housing, having less than a high school education, and having children in the households (Normén et al. 2005).

Likewise, in a study of homeless and marginally housed respondents with HIV/AIDS in San Francisco, Weiser et al. (2009) measured food insecurity using the Household Food Insecurity Access Scale. It was found that half of these patients were experiencing food insecurity with a quarter being severely food insecure. While all of these patients were receiving antiretroviral therapy, the costs for this treatment were not covered by public health insurance, and associations were found between food insecurity and medication non-adherence, which was dichotomized to above and below 80% compliance to prescribed levels. Weiser et al. (2009) found that participants who were experiencing severe food insecurity were more likely to have less than 80% adherence, to have detectable incomplete viral suppression, to be depressed, and to report drug use over the past 30 days. These findings suggest that non-medical services and needs, such as adequate access to food and housing, have a significant impact on HIV clinical outcomes. The fact that food insecurity is independently associated with a higher risk of incomplete viral suppression that may compromise treatment in even well-resourced urban settings argues for the fact that non-medical services should be considered a vital part of comprehensive HIV care.

## **2.3 – Social Assistance in Canada**

### 2.3.1 - The Establishment of Social Welfare in Canada

Social assistance in Canada is considered the income support program of last resort, and may be granted to any household that has been determined to be unable to provide for their basic needs, who have exhausted all other options (Caledon Institute, 2013; Kneebone and White, 2014).

In Canada, the federalist system of governance stipulates that provincial governments have jurisdiction over social services for non-Aboriginal citizens, which creates interprovincial

variation in policies. The federal government continues to provide social services for individuals of Aboriginal descent. The division of authority between federal and provincial powers stems back to interpretations of the Constitution Act of 1867. It was inferred that provinces have primary jurisdiction over social services, including health care and social assistance (Banting, 2007; Social Assistance Statistical Report, 2008). However, while these are administered provincially, they are largely funded from federal sources (Breitkreutz, 2012).

In 1966, the establishment of the Canada Assistance Plan instituted a cost-sharing model in which the federal government distributed transfers to provincial governments to finance social assistance services (Curtis & Pennock, 2006; Social Assistance Statistical Report: 2008; Breitkreutz, 2012; Kneebone and White, 2014). Social assistance was relatively stable and there was little variation between the provinces and territories (Curtis & Pennock, 2006). The provinces were required to report the number of social assistance beneficiaries they served, and to make this information publicly available (Kneebone and White, 2014).

The next significant change in legislation occurred in 1995, when the establishment of the Canada Health and Social Transfer (CHST) replaced the Canada Assistance Plan (Curtis & Pennock, 2006; Social Assistance Statistical Report: 2008). Similar to its predecessor, the CHST provided federal transfers in support of provincial programs. However, the funding for social assistance was now received as part of a block of services that also included health care, post-secondary education, early childhood development and child care (Curtis & Pennock, 2006; Social Assistance Statistical Report: 2008; Breitkreutz, 2012). This allowed provinces increased autonomy over which areas to prioritize spending, resulting in an increased variability between provincial social assistance programs due to “competition” with other services (Curtis & Pennock, 2006).

The most recent policy development occurred in 2004, when the CHST split into two separate block funds: the Canada Health Transfer (health care) and the Canada Social Transfer (social assistance and social services, post-secondary education, early childhood

development and early learning and child care) (Curtis & Pennock, 2006; Social Assistance Statistical Report: 2008).

### 2.3.2 – Present Social Assistance Policy in Canada

Currently, the Canada Social Transfer guides the principles of federal and provincial transfers of social assistance and social services. In all provinces, applicants for social assistance must be either Canadian citizens or Permanent Residents. Programs are available for refugees or those claiming asylum, but they are under separate legislation regarding eligibility. Social assistance in Canada may be granted to any household that has been determined to be unable to provide for their basic needs. In order to determine financial eligibility, applicants to social assistance must undergo a financial needs or means test of the household finances and assets. A case worker will review the applicant's household income, resources, and assets, while also taking the health of the applicant into account (Caledon Institute, 2013). In recognition of the fact that living expenses are highly dependent on family size and composition, provinces have allotted assistance policies in graduated amounts.

For adults in households receiving social assistance, each province differentiates between those who are facing temporary barriers to the workforce, and those requiring more long-term support. Thus, each province has established separate regulations to address the needs of these two general categories of assistance:

#### **1. Income Assistance (Short-Term)**

This assistance is intended for recipients who are currently unable to cover their basic needs and household expenses due to barriers to employment. However, recipients are considered employable, and assistance is intended as a short-term support measure. Following mandatory welfare-to-work policies, recipients are provided with employment assistance as well as financial assistance: all programs include supports to help recipients find and maintain employment. Barring being excused for health reasons, all Income Assistance recipients must be actively looking for work,

participating in programs to seek employment, or training for future employment (Breitkreutz, 2012).

## **2. Disability Assistance (Long-Term)**

These programs provide support to individuals suffering a mental or physical disability as a long-term support measure. Applicants to these benefits must submit validation by a medical professional stating the level of impairment in addition to the application and financial needs assessment. In recognition of their increased needs, these recipients are generally provided more generous policies and additional support (Social Assistance Statistical Report: 2008). Disability Assistance recipients may choose to work if they are able, but their participation is voluntary.

### 2.3.3 – Food Insecurity

In addition to the effects of low income, there is a strong and consistent association between social assistance and food insecurity. Receiving social assistance or worker's compensation/employment insurance as the main source of household income posed a much greater risk of food insecurity compared to other income sources (Che & Chen, 2001; Vozoris, Davis, & Tarasuk, 2002; McIntyre, 2003; Vozoris & Tarasuk, 2003; Gucciardi, 2009; Tarasuk & Vogt, 2009). In 2012, 31.8% of households receiving social assistance as their main source of income were considered moderately food insecure, with an additional 29.4% being severely food insecure (PROOF, 2014). However, there is a provincial variation in food insecurity observed among the social assistance population. The rate of food insecurity among households reporting social assistance as their main source of income ranged from 46.2% in Newfoundland and Labrador to 78.7% in Alberta (PROOF, 2014).

In an analysis of the Ontario sample of the CCHS Cycle 2.2 (2004), Tarasuk & Vogt (2009) found that even after household income and other socio-demographic characteristics had been controlled for, social assistance households had almost four times the odds of experiencing food insecurity compared to households receiving employment income. Work based on the National Population Health Survey Cycle 2 (1996/1997) concurs with this finding. Again, households receiving social assistance as their main source of income were

three times more likely to experience food insecurity than households receiving employment income (Vozoris & Tarasuk, 2003). Che & Chen (2001) also found similar results in an analysis of the 1998/99 National Population Health Survey in terms of the likelihood of experiencing any type of food insecurity. Tarasuk et al.'s (2013) analysis of 2007-08 CCHS also revealed heightened odds of food insecurity among social assistance recipients even after controlling for household income and other socio-demographic characteristics (education, home ownership, household type, Aboriginal status, and provincial vs. territorial residence).

#### 2.3.4 –Health

Household income, the most commonly used measure of socio-economic status, exhibits a strong relationship with health inequality favouring households with higher incomes (Frohlich, 2005; Humphries, 2000; Curtis & Pennock, 2006). In an analysis of the 2004 Canadian Community Health Survey, Frohlich et al. (2005) found a distinct health-income gradient: respondents with the highest incomes were the most likely to report excellent or very good health, followed by those with middle incomes, and lastly, those in with the lowest income category. Experiencing poverty in particular has been associated with lower self-perceived health, more medical conditions, increased symptoms of disease, and limitation of activities (Williamson, 1998).

In a study of the 1996 – 1997 National Population Health Survey, Vozoris & Tarasuk (2004) analyzed the odds that an adult in a household receiving welfare would report health problems compared to an individual in a household with a different source of income. Households on welfare were defined as those who claimed welfare, unemployment insurance, or worker's compensation as their main source of incomes over the last 12 months. In addition, the reported incomes must have been in either the lowest or low middle categories of income adequacy. Compared to households with other sources of income, recipients receiving welfare were more likely to report poor or fair health, poor functional health, and depression. After adjusting for age and sex of the respondent, welfare recipients were also more likely to report diabetes.

Respondents receiving welfare were also differentiated on whether or not they reported “restricted activity,” defined as a long-term disability, physical or mental condition or health problem that limited the kind or amount of activity they are able to perform (Vozoris & Tarasuk, 2004). Amongst those who did report a disability, there was an additional higher likelihood of obesity. Curiously, these same respondents were less likely to report heart disease.

The first measure listed above—self-reported health—is also one of the most commonly used. Self-reported health may be an inherently subjective measurement device, but in a comparison of the results of self-assessed health with a more objective value – the Health Utility Index Score – Humphries et al. (2000) found no significant differences in respondents’ health statuses.

Humphries et al. (2000) stratified respondents of the 1994 National Population Health survey into 10 income categories, and assessed the health status of each category via two indicators: self-assessed health via a Likert scale (excellent, very good, good, fair, and poor) and the Health Utility Index, a combined rating of functional status in 8 domains (vision, hearing, speech, ambulation, pain, emotion, dexterity, and cognition). While the differences in health by income decile were larger than when using self-assessed health compared to the Health Utility Index, this difference was not significant (Humphries, 2000).

However, the differential in health cannot solely be attributable to level of income—the source of income, particularly social assistance, must also be considered. Though they have similarly low levels of income, individuals in households receiving social assistance have, on average, lower levels of health than individuals who are considered part of the “working poor” (Williamson, 1998; Humphries, 2000; Kiely, 2013).

In a study of 130 individuals who were customers of human service agencies in Edmonton, Williamson et al. (1998) compared the health impact of receiving social assistance versus simply poverty. All respondents were in poverty, with a household income below the LICO over the prior year, but the study differentiated between the working poor and social

assistance recipients. Through comparison of various health indicators Williamson et al. (1998) found that social assistance recipients were less healthy than their working poor counterparts: social assistance recipients reported significantly lower self-perceived health status, received more medical treatment and prescription medications, had greater number of conditions and more symptoms from said illnesses, scored lower on the Mental Health Inventory, and overall experienced more activity limitations. These effects persisted even after accounting for the fact that social assistance recipients are entitled to supplemental health care benefits as part of their assistance, while the working poor do not enjoy such benefits from their employers; and that the average income was higher among the working poor (Williamson, 1998).

Mental health disorders are strongly associated with reduced employment and earnings, as they present a significant barrier to workforce engagement (Kiely, 2013; Wahl, 2010). In a nine-year longitudinal analysis of the Household, Income and Labour Dynamics in Australia (HILDA) Survey, Kiely et al. (2013) studied the association between welfare and mental health. The HILDA Survey is a nationally representative household panel survey, similar to the Canadian Survey of Labour and Income Dynamics. The outcome was mental health, as measured by the mental health subscale of the Short Form 36 Questionnaire, which is an assessment of health status and physical functioning over the previous 4 weeks. After adjusting for sociodemographic factors, only receiving welfare and disability payments remained reliable predictors of low mental health. Respondents on disability had the lowest mental health scores overall, followed by those on welfare. Accordingly, individuals who transitioned from welfare to disability assistance saw a significant decrease in their mental health scores. Even more remarkably, respondents who had ever received welfare or disability assistance had poorer mental health than those who had never received assistance, even at times when they were not receiving assistance. However, their mental health was even poorer at times when they were receiving assistance compared to not receiving assistance (Kiely, 2013).

Receiving social assistance is associated with poorer health across various types of measures, indicating that it is not tied to one condition. However, much of the data regarding health and

social assistance is cross-sectional in nature, making it impossible to establish causal pathways. An explanation for this relationship was proposed by Morris et al. (2005) using the drift hypothesis, which speculates that deterioration in health status will impair the working ability of an individual, and thus reduce income level. Individuals may do this by shifting to part-time work, leaving work directly, causing a drop in income and a shift to social assistance.

This hypothesis was supported by the authors' longitudinal survey of Saskatchewan Health's administrative databases wherein the number and type of physician services used by an individual were monitored over three 6-month periods: a year to six months prior to beginning social assistance, 6 months prior to the start of social assistance, and the first 6 months of receiving social assistance (Morris et al, 2005). The use of an objective record such as the number of physician services helps to eliminate self-reporting bias. Half of the respondents increased the number of physician services they used from the first to third period. Of this, 53% of the increase in use happened before the respondents began receiving social assistance, indicating that poor health is the antecedent to lower income. The highest percentage increase was found for mental health services, for both men and women. While there was also rise in the use of preventative services such as general wellness exams, these accounted for only a small portion of the increase. This increase in physician service over this period was not attributable to general trends in Saskatchewan, given that service use in the general population increased by only 4% for the period in which this study was conducted (1997 to 2000).

The authors recognized that the drop in health status may have occurred prior to the start of social assistance, but outside their scope of measurement, such as after the loss of employment (Morris et al, 2005). In this case, the direction of causality is reversed: a drop in income may precede and result in lower health status due to material conditions. This may be explained by a pathway in which lowered income may impact the individual's ability to afford adequate food, housing, and healthy lifestyle behaviours (Morris et al., 2005). This theory supports Frohlich et al.'s theoretical framework that income translates to health

disparities in the form of material resources and opportunities and lowered economic capital (2005). Therefore, unemployment may affect health (Wahl, 2010).

## **2.4 – Summary**

Food insecurity is consistently associated with a reliance on social assistance, and both of these are in turn associated with poor physical and mental health. The increased vulnerability of social assistance recipients may speak to the inadequacy of benefits provided. However, the fact that social assistance recipients are at increased risk for food insecurity even after income and other household socio-demographic characteristics are taken into account suggests that their heightened vulnerability is about more than their low income levels. Observed variation in the rates of food insecurity among social assistance recipients across provinces and territories (PROOF, 2014) point to the importance of considering differences in provincial/territorial social assistance policy. Provincial/territorial policies related to social assistance are reviewed in the next chapter.

## **Chapter 3 – Overview of Social Assistance in Canada**

### **3.1 – Overview of Provincial Benefits**

As each province and territory is responsible for the governing and provision of social assistance in Canada, there is substantial variation in policies between regions (Curtis & Pennock, 2006). While the differences between provinces and types of assistance vary considerably, the basic structure of social assistance policy is very similar across the country (Caledon Institute, 2013). In this section we summarize the main aspects of social assistance policy in the provinces: yearly benefit rate, assets, and income. The territories are omitted from discussion due to their high proportion of Aboriginal residents, who are eligible for additional federally granted social benefits that are not comparable to the rest of the population. The review focuses primarily on policies pertaining to single adults because they receive lower benefits than multi-person households on social assistance, even after taking into account differences in household size (Caledon Institute, 2013). As such single adults on social assistance are the most economically disadvantaged group overall, but they are also potentially the group whose circumstances are most sensitive to provincial policy variations. More detailed summaries of each province's social assistance policy manuals may be found in the Appendix.

#### **i. Yearly Benefit Rate**

The monetary amount of social assistance is set by provincial regulation, and so differs accordingly by region (Table 3.1). These values are taken from the Welfare in Canada 2012 report published by the Caledon Institute of Social Policy (2013), and represent the average amount a single individual would receive. In almost all provinces, the yearly benefit rate is composed of a general living allowance, a shelter benefit, and applicable provincial benefits.

In calculating provincial benefit rates, the Caledon Institute made several assumptions. Households were presumed to be receiving social assistance for the entire year, during which they had no other incomes, so they would be eligible for the maximum amount of social assistance available. The calculations included basic rates and regular additional items (like the Christmas Allowance), but not special needs allowances paid on a discretionary basis

(such as the Special Diet Allowance for diabetics). Any changes in policy that occurred over the year are accounted for. Households were assumed to live in their province's largest city or town. For those renting their dwellings, households were assumed to be living in private market housing, with utility costs included in the rent (Caledon Institute, 2013).

**Table 3.1 – Yearly Assistance Rate for Single Adults by Province, in Constant 2012 Dollars**

| Province             | Income Assistance |          | Disability Assistance |          |          |
|----------------------|-------------------|----------|-----------------------|----------|----------|
|                      | Year              | 2011     | 2012                  | 2011     | 2012     |
| Newfoundland         |                   | \$10,222 | \$10,813              | \$10,811 | \$10,846 |
| Prince Edward Island |                   | \$7,259  | \$7,157               | \$9,553  | \$9,416  |
| Nova Scotia          |                   | \$7,059  | \$7,136               | \$9,937  | \$9,970  |
| New Brunswick        |                   | \$6,898  | \$6,801               | \$8,917  | \$8,837  |
| Quebec               |                   | \$7,673  | \$8,233               | \$11,359 | \$11,957 |
| Ontario              |                   | \$8,225  | \$8,067               | \$13,979 | \$13,772 |
| Manitoba             |                   | \$7,025  | \$7,037               | \$9,640  | \$9,640  |
| Saskatchewan         |                   | \$9,024  | \$8,901               | \$11,530 | \$11,263 |
| Alberta              |                   | \$7,356  | \$7,649               | \$9,594  | \$9,850  |
| British Columbia     |                   | \$8,066  | \$7,952               | \$11,733 | \$11,561 |

**Source:** Caledon Institute, 2013

## ii. Assets

In the needs assessment of applicant's eligibility for social assistance, all provinces set limits on the amount and nature of fixed and liquid assets allowed.

### Fixed Assets

#### a) *Primary Home or Dwelling*

Social assistance recipients are able to own their primary place of residence in all provinces. However, provincial policies differ in the way in which this home is

considered in the calculation of need. While most consider the home as exempt from the needs-based calculation, others such as Quebec impose a limit on the value of the home, above which threshold the value of the home must be included in the recipients' considered assets.

*b) Motor Vehicle*

All provinces allow recipients to retain one motor vehicle, but this may be subject to certain conditions. Provinces more may impose limits on the monetary value of the vehicle, as well as the availability of alternate forms of transport in their region.

### **Liquid Assets Limit**

All assets that can be readily turned into cash are considered liquid assets, and their value is subject to upper thresholds, above which the recipient is no longer considered eligible for assistance. Some provinces, such as British Columbia, have even stricter limits on liquid assets for those first applying to social assistance, compared to current applicants. This distinction is made to reinforce the idea that applicants to social assistance must be doing so as a last financial resort, while the increased limits for recipients is intended for them to increase their savings, and thereby autonomy. Assets that cannot be readily turned into cash (real estate, motor vehicles, working equipment) are considered real assets, and are considered separately.

**Table 3.2 – Liquid Asset Limits for Single Adults by Province, 2011 – 2012**

| Province             | Income Assistance | Disability Assistance |
|----------------------|-------------------|-----------------------|
| Newfoundland         | \$3,000           | \$3,000               |
| Prince Edward Island | \$200             | \$900                 |
| Nova Scotia          | \$1000            | \$1000                |
| New Brunswick        | \$1000            | \$3000                |
| Quebec               | \$1500            | \$2500                |
| Ontario              | \$599             | \$5000                |

|                  |        |        |
|------------------|--------|--------|
| Manitoba         | \$4000 | \$4000 |
| Saskatchewan     | \$1500 | \$1500 |
| Alberta          | \$583  | \$1530 |
| British Columbia | \$1500 | \$3000 |

**Source:** Caledon Institute, 2013

### **Exempt Liquid Assets**

Certain liquid assets are exempt from the needs assessment, and though they vary by province, similar trends occur: most provinces do not take Registered Education Savings Fund, Registered Disability Savings Funds, or small gifts or donations into consideration. In most provinces, business assets used for self-employment, which generate a profit, are also exempt up to a limit.

#### iii. Earning Exemptions

The earnings of social assistance recipients, along with all their other income, are considered in the needs assessment. Each province sets a threshold for the exemption of these earnings, above which the social assistance benefit rate received is scaled back, proportionately for income. Earnings exemptions allow recipients to keep a portion of their income without a decrease in their social assistance benefits. Earnings exemptions serve to provide an incentive to work and a method for the household to increase its financial resources. While some sources of income remain exempt, they vary by province and type of assistance program.

**Table 3.3 – Earnings Exemptions for Single Adults by Province**

| Province             | Income Assistance                         | Disability Assistance                      |
|----------------------|---|--|
| Newfoundland         | \$75 of net wages plus 20% of the balance | \$150 of net wages plus 20% of the balance |
| Prince Edward Island | \$75 of net wages plus 10% of the balance | \$75 of net wages plus 10% of the balance  |

|                  |  |  |
|------------------|--|--|
| Nova Scotia      | \$150 of net wages plus 30% of the balance       | \$300 of net wages plus 30% of the balance                   |
| New Brunswick    | \$150  | \$250  |
| Quebec           | \$200  | \$200  |
| Ontario          | 50% of net earnings after 3 months of assistance | 50% of net wages   |
| Manitoba         | \$200 of net wages plus 30% of the balance       | \$200 of net wages plus 30% of the balance                   |
| Saskatchewan     | None (TEA clients)                               | \$200 of net wages plus 25% of the next \$500; maximum \$325 |
| Alberta          | \$230 of net wages plus 25% of the balance       | \$230 of net wages plus 25% of the balance                   |
| British Columbia | None   | \$500  |

**Source:** Caledon Institute, 2013

#### iv. Health-Related Benefits

##### a) Drug Benefits

Outpatient medications are not covered under the Canada Health Act, which finances hospital and physician services only (Daw & Morgan, 2012; Allin & Laporte, 2011). Similar to the structure of social assistance, the federal government provides guidelines for the flow of healthcare funds to the provinces, while the actual implementation, management, and delivery of services are the responsibility of individual provinces (Sarma, Basu & Gupta, 2007). All ten provinces have a drug coverage program in place for social assistance recipients, which range in cost-sharing structures from \$5 co-payment per prescription to full coverage (Daw & Morgan, 2012).

Access to prescription medication is important since they are essential to the treatment and prevention of diseases, especially for chronic conditions, when patients require medication for extended periods of time, even during periods of symptomatic remission (Kennedy, Tuleu & Mackay, 2008; Kane & Shaya, 2007). As adherence to drug regimens is a primary

determinant of clinical outcomes, non-adherence to prescription medication for the treatment of chronic diseases has been identified as a significant health problem that increases the risk for drug-related morbidity and mortality (Wagner, Heisler, & Piette, 2008; Kennedy et al. , 2008; Piette, Heisley & Wagner, 2004). A broad range of diseases have been linked to medication non-adherence, indicating that this association is not condition-specific. They include hyperlipidemia, hypertension, depression, arthritis, inflammation and chronic pain, diabetes, asthma, emphysema, chronic obstructive pulmonary disease, infections, and gastric ulcers (Bengle, 2010; Kennedy et al. , 2008; Piette et al., 2004).

Resulting health problems include pain or discomfort and exacerbation of disease symptoms, which may affect individual's ability to manage their household food situation (Law & Cheng, 2007). The characteristics of Canadians more likely to practice medication non-adherence strategies strongly resemble the predictors of food insecurity: poor or fair self-assessed physical and mental health status; low household income and/or poverty; female gender; lower levels of education, having more than one chronic conditions and a more complex drug regimen; having a higher prescription cost burden, and being under the age of 65 (Law & Cheng, 2007).

The most commonly cited reason for Canadians to practice medication non-adherence was prohibitive cost.(Law & Cheng, 2007). There is considerable evidence that demand for prescription drugs is sensitive to out-of-pocket price, and high and/or increases in out-of-pocket expenditures have been associated with cost-related medication non-adherence in Canadians, especially in vulnerable populations (Allin & Laporte, 2011; Law & Cheng, 2007; Lexchin & Grootendorst, 2004). A review of the CCHS 2.2 on the effect of drug insurance on the use of prescription medications indicated that in light of high deductibles and co-payments, patients may reduce or terminate their use of medication. Conversely, lower cost sharing will improve compliance with drug regimens (Sarma et al., 2007).

In a review of 25 studies (all North American with the exception of two from Belgium and New Zealand) concerning the effects of cost sharing and user fees on use of drugs and health services, Lexchin & Grootendorst (2004) came to the conclusion that cost sharing through

the use of copayments or deductibles decreases the use of prescription drugs by the poor and the chronically ill. The authors identified the following groups as vulnerable to increasing absolute out-of-pocket costs: social assistance recipients, households with low income, patients diagnosed with chronic conditions that require frequent drug usage, and those with poor health. In addition, households below the poverty line that lacked drug coverage and individuals who had five or more chronic conditions incurred significantly higher out-of-pocket spending on medications (Lexchin & Grootendorst, 2004). Their estimates of drug price elasticity among vulnerable groups—those with low income and/or chronic illnesses—were between  $-0.34$  to  $-0.50$ . Thus amongst low income drug users, even relatively small copayments (on the order of \$0.50, in 1979 dollars) reduced drug use by 26 percent. (Lexchin & Grootendorst, 2004)

### **b) Special Diet Allowances**

The increased cost of a specialized diet required for certain conditions has been recognized by the creation of Special Diet Allowances for social assistance recipients. To be considered, recipients must be approved by a health care professional. Provinces vary in the conditions eligible and in the monthly allowance amounts (Table 3.4).

**Table 3.4 – Special Diet Allowances by Province**

| Name                    | Condition       | Amount           | Requirements  |
|-------------------------|-----------------|------------------|---|
| <b>Alberta</b>          |                 |                  |   |
| <b>Special Diets</b>    | Diabetes        | \$40/month/adult | Must be receiving Alberta Works income support                |
| <b>British Columbia</b> |                 |                  |   |
| <b>Diet Supplements</b> | Diabetes        | \$35 / month     | Clients receiving income assistance or disability assistance. |
|                         | Cystic fibrosis | \$50 / month     |   |
| <b>Manitoba</b>         |                 |                  |   |

|                                   |                |                  |  |
|-----------------------------------|----------------|------------------|--|
| <b>Therapeutic Diet Allowance</b> | Diabetes:      |                  | Diet must be prescribed by a physician or Registered Dietician |
|                                   | 1000 kcal      | \$27.27 / month  |  |
|                                   | 1200 kcal      | \$31.35 / month  |  |
|                                   | 1500 kcal      | \$51.46 / month  |  |
|                                   | 1800 kcal      | \$67.49 / month  |  |
|                                   | 2000 kcal      | \$81.63 / month  |  |
|                                   | 2200 kcal      | \$101.74 / month |  |
|                                   | 2300 kcal      | \$115.84 / month |  |
|                                   | 2400 kcal      | \$126.38 / month |  |
|                                   | 2500 kcal      | \$136.93 / month |  |
|                                   | 2600 kcal      | \$145.07 / month |  |
|                                   | 2700 kcal      | \$153.84 / month |  |
|                                   | 2800 kcal      | \$165.52 / month |  |
|                                   | 3000 kcal      | \$171.49 / month |  |
|                                   | Gastric Ulcers | \$36.20 / month  |  |

### New Brunswick

None found for chronic conditions studied;  
Dietary Supplements available for:

- Major physical trauma
- Postoperative period
- Significant weight loss
- Receiving chemotherapy or radiation
- Neurological degeneration

### Newfoundland

|                               |   |                  |  |
|-------------------------------|---|------------------|--|
| <b>Special Diet Allowance</b> | Limited conditions (including diabetes) | Up to \$60/month | Condition must be confirmed by physician |
|-------------------------------|---|------------------|--|

### Nova Scotia

|                               |  |               |                       |
|-------------------------------|--|---------------|-----------------------|
| <b>Special Diet Allowance</b> | Cardiovascular Disease – Low sodium    | \$27/month    | Medical Documentation |
|                               | Crohn's Disease/<br>Ulcerative Colitis | \$66 /month   |                       |
|                               | Cystic Fibrosis                        | \$133 / month |                       |

|                               |  |  |  |
|-------------------------------|--|--|--|
|                               | Diabetes<br>< 1,200 kcal<br>1,201 – 1,500 kcal<br>1,501 – 1,800 kcal<br>1,801 – 2,000 kcal<br>2,001 – 2,200 kcal<br>2,201 – 2,400 kcal<br>2,401 – 2,600 kcal<br>2,601 – 2,800 kcal<br>2,801 – 3,000 kcal<br>> 3,000 kcal | None<br>\$5 / month<br>\$18 / month<br>\$26 / month<br>\$34/ month<br>\$42/ month<br>\$51/ month<br>\$60/ month<br>\$68/ month<br>\$8 /month for each additional 200kcal |  |
|                               | Hyperlipidemia – low fat diet  | \$27/month   |  |
| <b>Ontario</b>                |  |  |  |
| <b>Special Diet Allowance</b> | Diabetes   | \$81 /month  | Must be receiving Social Assistance  |
|                               | Hyperlipidemia   | \$51/month   |  |
|                               | Hypertension   | \$86/month   |  |
| <b>Prince Edward Island</b>   |  |  |  |
| <b>Special Diet</b>           | Certain conditions   | \$25 / month   | Must be receiving Social Assistance, assessed by nutritionist                |
| <b>Quebec</b>                 |  |  |  |
| <b>Special Diet Allowance</b> | Diabetes   | \$20/month   | Medical Documentation  |
| <b>Saskatchewan</b>           |  |  |  |
| <b>Special Food Allowance</b> | Diabetes and hyperlipidemia<br>1900-2499 kcal<br>2500-2999 kcal<br>>3000 kcal  | \$27<br>\$42<br>\$75   | Must be receiving social assistance, diet must be prescribed by nutritionist |

### **3.2 – Income Assistance and Disability Beneficiaries**

The size of provincial social assistance programs can be measured in the number of “cases” or households, or via the number of “beneficiaries,” which accounts for the number of heads

of family units on social assistance, plus all their dependents (Kneebone and White, 2014). For single adult households, the cases and beneficiaries are the same. This comes in useful as some provinces only post information using one of the two measures. However, as Kneebone and White (2014) have noted, this data can be challenging to obtain. For some provinces, detailed reports are available on their websites, including a breakdown of number of cases by type of assistance and household type (eg. Ontario). Some provinces provide only a total number of social assistance recipients by the month, without stratifying by household or program type (eg. Newfoundland). Lastly, some provinces fail to post reports at all (eg. Nova Scotia).

Table 3.4 summarizes the number and proportion of Income and Disability Assistance recipients in most provinces in 2011 and 2012. It is important to note that Saskatchewan's Disability Assistance Program was only opened to independently living recipient in June 2012. Prior to this, all recipients were institutionalized, possibly account for the low percentage. However, even after the change in legislation, Saskatchewan has a much lower proportion of Disability Assistance recipients.

**Table 3.5 – Social Assistance Caseloads by Province and Type of Assistance**

| Province                  | Total Cases | Number on Income Assistance | Number on Disability Assistance |
|---------------------------|-------------|-----------------------------|---------------------------------|
| 2011                      |             |                             |                                 |
| New Brunswick             | 25,055      | 18,987 (75.8%)              | 6,068 (24.2%)                   |
| Quebec                    | 334,791     | Not available <sup>1</sup>  |                                 |
| Ontario                   | 545,057     | 258,892 (47.5%)             | 286,166 (52.5%)                 |
| Manitoba                  | 34,147      | 14,524 (42.5%)              | 19,623 (57.5%)                  |
| Saskatchewan <sup>2</sup> | 26,857      | 24,170 (90.0%)              | 2,687 (10.0%)                   |
| Alberta                   | 36,979      | Not available <sup>3</sup>  |                                 |
| British Columbia          | 136,278     | 57,406 (38.1%)              | 78,871 (57.9%)                  |
| 2012                      |             |                             |                                 |
| New Brunswick             | 24,831      | 18,761 (75.6%)              | 6,153 (24.8%)                   |

|                           |         |                 |                 |
|---------------------------|---------|-----------------|-----------------|
| Quebec <sup>2</sup>       | 328,439 | 199,174 (60.6%) | 129,265 (39.4%) |
| Ontario                   | 560,873 | 260,053 (46.4%) | 292,913 (52.2%) |
| Manitoba                  | 35,427  | 15,045 (42.5%)  | 20,382 (57.5%)  |
| Saskatchewan <sup>1</sup> | 26,494  | 23,352 (88.1%)  | 3,142 (11.9%)   |
| Alberta                   | 34,323  | 17,749 (52.0%)  | 16,389 (48.0%)  |
| British Columbia          | 134,402 | 51,197 (38.1%)  | 83,205 (61.9%)  |

<sup>1</sup> Information is only available starting from April 2012 until December 2012

<sup>2</sup> Institutionalized recipients only in 2011 and up to May 2012

<sup>3</sup> Social assistance records published for 2012 only

## **Chapter 4 – Rationale and Research Objectives**

### **4.1 – Rationale**

Households receiving social assistance as their main source of income have been consistently identified as being at greater risk of experiencing food insecurity compared to households in the workforce. In addition, poor health is pervasive amongst population subgroups defined by either food insecurity or social assistance, as both food insecure and social assistance recipients are more likely to report poor or fair physical and mental health, and multiple chronic conditions. Yet, to date there has been no research that integrates these two potent indicators of vulnerability.

While the socio-demographic and health correlates of food insecurity have been explored in the general population, to the best of our knowledge, there has been no analysis focused on the social assistance population. While the inadequacy of benefit levels may explain the increased vulnerability of social assistance recipients overall, it cannot account for the provincial variation in food insecurity levels observed among this population. The provincial jurisdiction over social assistance policies in Canada makes the examination of provincial policies a significant addition to the socio-demographic and health factors investigated in relation to food insecurity in the general population.

This study focuses on single-adult households on social assistance for several reasons. Firstly, single adults are disproportionately more likely to be affected economically by poor health than couples, as they lack the safety net of a second income (Morris, 2005). The lack of others in the household also removed the possibility that another member was experiencing the same chronic conditions that were affecting household food security status, but whose effects we would be unable to account for. Respondents have often reported that family health problems, including spouse or partner illness, addiction, and child behaviour issues affected their ability to work (Taylor, 2004). By restricting to single adults, we can examine the direct effects of poor health on food insecurity, rather than the indirect effects due to the need to take care of a sick family member (Morris, 2005).

## **4.2 – Research Objectives**

The overall objective of this thesis was to explore the factors associated with vulnerability to food insecurity among single adults reliant on social assistance over a 12-month period. The potential explanatory factors analyzed included province of residence, provincial policies, sociodemographic factors, and chronic health conditions. Through our analysis, we attempted to achieve four specific objectives:

1. To compare the food security status of single adult households receiving social assistance as their main source of income across provinces, and identify specific provincial policies potentially associated with observed inter-provincial differences.
2. To identify socio-demographic variables associated with vulnerability to food insecurity amongst households reliant on social assistance once interprovincial policy variations have been controlled for.
3. To determine how the chronic disease status of adults on social assistance affects their likelihood of experiencing food insecurity when controlling for provincial and socio-demographic factors.
4. To describe the relationship between food security status and a broad spectrum of self-reported measures of health and well-being.

## **Chapter 5 – Data and Methods**

### **5.1 – Canadian Community Health Survey**

The Canadian Community Health Survey covers over 98% of the Canadian population 12 years or older who reside in the ten provinces and three territories. Excluded respondents include those living on Aboriginal reserves, full-time members of the Canadian Forces, institutional residents, and persons living in the Quebec health regions of Région du Nunavik and Région des Terres-Cries-de-la-Baie-James (Statistics Canada, 2013).

Data is collected on an ongoing basis throughout the year, meaning that questions regarding “the last 12 months” may correspond to different time periods between respondents.

However, the sample was divided into 12 collection periods of 2 months in length. Each of these collection periods was representative of the population of the ten provinces.

The 2011-2012 Master Data File, accessed in the Toronto Regions Statistics Canada Research Data Centre, was used for all analyses. These files included person weights representing Statistic Canada’s sampling strategy. The HFSSM was included in the 2011-2012 CCHS as a two-year common content module, and was assessed in all provinces and territories.

### **5.2 – Analytic Sample**

#### **Single Working-Aged Adult Households**

Respondents were considered single adults if they were aged 18 to 64, were “unattached” and either living alone or with others, and had no children under the age of 18. We imposed this cut-off age due to the fact that after reaching the age of majority, offspring of the respondent were no longer considered dependents and were eligible to apply for social assistance on their own. Single-adult households represented the largest proportion of social assistance recipients in CCHS, so focusing on this subgroup maximizes the size of our analytic sample. Individuals 65 years of age and older were excluded because of the increased prevalence of ill health among this age group, but also because of the different income assistance benefits available to those 65 years and over.

### i. Social Assistance as Main Source of Income

In order to be included, respondents must have chosen “welfare/social assistance” in answering the question: “What was the main source of household income over the past 12 months?” However, this variable did not distinguish whether the individual was receiving income or disability assistance.

### ii. Income

The income of a respondent reported on the CCHS may have been determined either directly from the respondent, or via imputation: all missing values due to either respondent refusal or respondent’s lack of knowledge of household income were imputed by Statistics Canada using statistical techniques. The values refer to the gross income received, before taxes and deductions are applied. To eliminate outliers and possible errors in imputation, we excluded from the final analytic sample all respondents with incomes that exceeded the 1<sup>st</sup> to 99<sup>th</sup> percentile.

### iii. Territories and Prince Edward Island

We excluded respondents residing in the territories and Prince Edward Island due to differing population demographics and insufficient cell size, respectively. The Northwest Territories, Yukon, and Nunavut had a disproportionately high number of respondents who had declared Aboriginal status. Aboriginal social assistance recipients are eligible for federal benefits in addition to provincial assistance available for the rest of the population, yet with the information available to us in CCHS, we have no way to identify and isolate these benefits. In addition, the factors contributing to food insecurity amongst the Aboriginal are unique in terms of access, availability, supply and utilization (Power, 2008). Prince Edward Island had an insufficient number of respondents to be allowed for release the Research Data Centre.

The 2011 – 2012 CCHS surveyed a total of 124,929 respondents over 12 years of age in the ten provinces and three territories. After applying our exclusion and inclusion criteria, our final analytic sample comprised 1554 single respondents aged 18 to 64 residing in 9 provinces (excluding Prince Edward Island).

### **5.3 – Methods/Variables**

#### Outcome: Adult Food Security Status

As our sample comprised only of single-adult households, we used only the 10 items pertaining to the adult experience on the HFSSM. This removed the variability in coding that would have resulted from families with children being classified based on 18 items, while childless households' food security status would only be based on 10 items. Respondents were classified as food secure, representing no indications of food insecurity (zero or one affirmative responses), moderately insecure, or severely insecure.

Moderate food insecurity corresponds to 2-5 affirmative adult responses, indicating inadequacy of household food supplies and adjustments to the quality of food consumed, but few or no indications of reduced quantity of food intake. Severe food insecurity was denoted by  $\geq 6$  affirmative responses to the adult questionnaire, and is characterized by disrupted eating patterns and quantitative deprivation (Health Canada, 2010).

#### i. Sociodemographic Variables

The analysis included sociodemographic variables associated with food insecurity in the general population, as well as those affecting eligibility or rates of social assistance.

- a. *Highest Level of Education Attained:* A four-level categorical variable specifying whether respondents had (1) less than a secondary school education, (2) graduated secondary school, (3) some post-secondary education, or (4) graduated post-secondary.
- b. *Urban or Rural Residence:* Urban areas have a population concentration at least 1000 with a population density of 400 or more per square kilometer; all other regions are considered rural.
- c. *Home Ownership:* Respondents were asked whether their current place of residence was owned by a member of the household. Those who responded negatively were assumed to be renting, though we are unable to differentiate those paying market prices from those receiving rent control.

- d. *Declaration of Aboriginal Status*: Respondents self-identified as an Aboriginal person (Inuit, Metis, or First Nations).
- e. *Age*: A continuous variable ranging from 18 to 64.
- f. *Sex*: A dichotomous variable; male was used as reference category.
- g. *Income*: Continuous variable, but odds ratios estimated the effect of every thousand dollars' increase.
- h. *Receiving Employment Income*: A binary variable indicated which respondents had reported any income from wages, salaries, or self-employment in the previous 12 months
  - i. *Ability to Work*: This variable was based on the respondent's working status in the week prior to the interview. Respondents who were working at a job or business, absent from their job, or looking for work were considered currently employable. Those who stated they were permanently unable to work were considered unemployable.

ii. Provincial Policy Coding

Some provinces may provide more adequate protection against food insecurity through other forms of support, besides monetary assistance. Thus, in addition to considering the effects of income on food insecurity, three variables were constructed to capture other interprovincial differences in social assistance policy affecting households, including: earnings exemption, liquid asset limits, and supplementary drug coverage. The policies were coded on a relative basis, using the rates for each province's Income Assistance program. We recognize that these policies may not be applicable to all respondents due to our inability to differentiate those receiving Income Assistance from those on Disability Assistance. Since policies such as the Earnings Exemptions are more applicable for Income Assistance recipients, we have chosen to apply the values of the less generous programs.

**Table 5.1 – Provincial Policy Variables**

| Monthly Earnings Exemptions (Singles, Income Assistance) |                           |  |   |
|--|---------------------------|--|---|
| Level 1 (\$0)  | Level 2 (Less than \$200) | Level 3 (\$200-300)  | Level 4 (\$300+)  |
| British Columbia<br>Saskatchewan                         | New Brunswick             | Newfoundland<br>Nova Scotia<br>Quebec                                      | Manitoba (\$316)<br>Alberta (\$332)<br>Ontario (\$336)            |
| Liquid Asset Exemptions (Singles, Income Assistance)     |                           |  |   |
| Low (<\$600)   |                           | Medium (\$1000 - \$1500)   | High (> \$3000)   |
| Ontario<br>Alberta                                       |                           | Nova Scotia<br>New Brunswick<br>Quebec<br>Saskatchewan<br>British Columbia | Newfoundland<br>Manitoba  |
| Supplementary Drug Coverage                              |                           |  |   |
| Low (\$4-5 co-pay)                                       |                           | Medium (\$2 Co-Pay)  | High (Full Coverage)  |
| Nova Scotia<br>New Brunswick                             |                           | Ontario<br>Saskatchewan  | British Columbia<br>Alberta<br>Manitoba<br>Quebec<br>Newfoundland |

### iii. Coding of Chronic Conditions

Respondents were asked whether they had been diagnosed with 16 chronic conditions by a health care professional, specifying that this condition “had lasted or was expected to last 6 months or longer” (CCHS, 2011 – 2012). For all analyses, three out of the sixteen chronic conditions were excluded: Alzheimer’s Disease, cancer, and arthritis. The prevalence of Alzheimer’s disease was too low amongst our respondents, leading to insufficient cell size. The cancer variable did not specify the type of cancer, and was similarly of low prevalence. Lastly, there was a measurement error regarding the phrasing of the arthritis question in Quebec between 2011 and 2012, making this variable unreliable. The diagnosis of chronic conditions was coded in two ways:

1. *Number of chronic conditions*: A categorical variable was used to indicate how many chronic conditions the respondent had been diagnosed with, using zero or none as the reference category. This is to account for co-morbidity and overall health status.
2. *Individual Conditions*: A binary variable was used to indicate whether a respondent had received a diagnosis for each individual condition. The exception was the mood or anxiety conditions, which were combined to form a mental health condition variable. In order to control for the possible effects of co-morbidity, a categorical variable denoting how many other conditions the respondent was included in the model as well.

#### **5.4 – Multiple Logistic Regression Analysis**

We used a series of multiple logistic regression models to identify factors associated with two binary outcomes:

1. The likelihood of experiencing moderate or severe insecurity versus food security
2. The likelihood of experiencing severe insecurity versus any other food security status.

The series of regression models run against each of these outcomes was designed to follow the order of our objectives (Table 5.2). Each model was repeated to examine two different food insecurity outcome measures: moderate-severe food insecurity and severe food insecurity. We chose to focus on severe food insecurity because it has been established to be especially detrimental to health (Muldoon, 2013).

We first sought to establish whether there was variation in the odds of moderate-severe or severe food insecurity between provinces in an unadjusted model (Model 1). Then, we observed whether any differences observed would persist once socio-demographic variables were controlled for (Model 2). Model 3 attempted to identify specific provincial policies potentially associated with observed provincial differences by substituting individual provinces with categories of policies.

In terms of chronic conditions analyses, we began with a model that included the number of chronic conditions reported by the respondent (Model 4). Next, the diagnosis or absence of each condition was entered individually as a binary variable to explore the relationship between individual conditions and food security status, in a regression model that included age, sex, the aforementioned socio-demographic variables, and number of other conditions (Model 5). For this analysis, mood and anxiety conditions were combined to form a mental health condition variable.

For those individual conditions that were associated with food insecurity, we conducted follow-up analyses amongst only those respondents who had been diagnosed with said condition. In Model 6, all sociodemographic variables included in the total sample models were considered, while controlling for province of residence. In Model 7, however, where provincial policies were evaluated, we retained only those sociodemographic variables that had been associated with moderate-severe or severe food insecurity in Model 6. The exceptions were age and sex of the respondent, which were included in all models.

**Table 5.2 – Series of Multiple Logistic Regression Models**

| <b>Odds of Food Insecurity<br/>(Moderate-Severe/Severe)</b>         | <b>Model 1</b>  |
|---|---|
|   | Province  |
| <b>Model 2</b>  |   |
|   | Province + sociodemographic variables + age + sex                               |
| <b>Model 3</b>  |   |
|   | Provincial Policy + sociodemographic variables + age + sex                      |
| <b>Model 4</b>  |   |
|   | Province + sociodemographic variables+ age + sex + number of chronic conditions |
| <b>Model 5</b>  |   |
|   | Province + sociodemographic variables + age + sex + individual conditions       |
| <b>Model 6 (Only respondents diagnosed with certain conditions)</b> |   |

|   |   |
|---|---|
|   | Province + sociodemographic variables+ age + sex + number of other chronic conditions |
| <b>Model 7</b> (Only respondents diagnosed with certain conditions) |   |
|   | Provincial health policy + significant sociodemographic variables+ age + sex          |

To examine the relation between respondents' food security status and their self-perceived health, pain and functional health, frequency of fruit and vegetable consumption, and body mass index (Objective #4), weighted Rao-Scott Chi-square tests were conducted to test the association between food security status and each characteristic.

All analyses were conducted using SAS 9.2 using SURVEY commands to account for the complex survey weights provided by Statistics Canada. Person weights were used to construct all estimates and for the regression analyses, reflecting the sample of single adults only.

## **Chapter 6 – Descriptive Statistics**

### **6.1 – Introduction**

In our overall sample, 38.8% of respondents were food secure, 31.8% were moderately food insecure, and 29.4% were severely food insecure (Table 6.1).

### **6.2 – Province of Residence**

The rates of food insecurity varied considerably across provinces (Table 6.1). Newfoundland and Ontario appeared to be the most food secure, boasting rates of 50.3% and 43.3% food security, respectively. The highest levels of moderate food insecurity were found in Manitoba (50.1%) and Saskatchewan (33.1%). In terms of severe food insecurity, Saskatchewan again had one of the highest prevalence rates at 45.4%, but was slightly exceeded by Nova Scotia at 45.6% and New Brunswick at 47.0%.

**Table 6.1 – Sample Characteristics by Food Security Status**

|                      | <b>Overall Sample</b> | <b>Food Secure</b> | <b>Moderately Food Insecure</b> | <b>Severely Food Insecure</b> |
|----------------------|-----------------------|--------------------|---------------------------------|-------------------------------|
| <b>All Provinces</b> |                       |                    |                                 |                               |
| Newfoundland         | 1.2%                  | 50.3%              | 30.9%                           | 18.8%                         |
| Nova Scotia          | 3.1%                  | 22.5%              | 31.9%                           | 45.6%                         |
| New Brunswick        | 1.9%                  | 29.4%              | 23.6%                           | 47.0%                         |
| Quebec               | 35.2%                 | 36.1%              | 30.9%                           | 33.0%                         |
| Ontario              | 38.9%                 | 43.4%              | 21.4%                           | 35.2%                         |
| Manitoba             | 2.6%                  | 31.9%              | 50.1%                           | 18.0%                         |
| Saskatchewan         | 2.4%                  | 21.5%              | 33.1%                           | 45.4%                         |
| Alberta              | 3.2%                  | 36.0%              | 29.0%                           | 35.0%                         |
| British Columbia     | 11.6%                 | 30.6%              | 28.5%                           | 40.9%                         |
| <b>Sex</b>           |                       |                    |                                 |                               |
| Male                 | 54.5%                 | 41.5%              | 27.9%                           | 30.6%                         |
| Female               | 45.5%                 | 32.6%              | 26.6%                           | 40.8%                         |
| <b>Age Range</b>     |                       |                    |                                 |                               |
| 18 - 25              | 10.3%                 | 32.9%              | 36.4%                           | 30.8%                         |
| 26 - 35              | 13.4%                 | 42.9%              | 27.4%                           | 29.8%                         |
| 36 - 45              | 12.9%                 | 32.5%              | 32.0%                           | 35.5%                         |
| 46 - 55              | 36.8%                 | 31.9%              | 25.4%                           | 42.7%                         |
| 56 - 64              | 26.5%                 | 46.7%              | 24.2%                           | 29.2%                         |

|                             |       |                      |                      |                      |
|-----------------------------|-------|----------------------|----------------------|----------------------|
| <b>Income Level</b>         |       | \$15,040<br>\$12,000 | \$13,114<br>\$12,000 | \$12,276<br>\$10,350 |
| <b>Aboriginal Status</b>    |       |                      |                      |                      |
| Declared                    | 10.2% | 41.6%                | 25.5%                | 32.9%                |
| None Declared               | 89.8% | 37.0%                | 27.5%                | 35.5%                |
| <b>Home Ownership</b>       |       |                      |                      |                      |
| Own                         | 9.1%  | 52.0%                | 27.0%                | 20.9%                |
| Rent                        | 90.9% | 36.0%                | 27.3%                | 36.6%                |
| <b>Population Centre</b>    |       |                      |                      |                      |
| Urban                       | 88.8% | 36.3%                | 27.8%                | 35.9%                |
| Rural                       | 11.2% | 47.0%                | 23.1%                | 39.9%                |
| <b>Ability to Work</b>      |       |                      |                      |                      |
| Able                        | 66.9% | 35.4%                | 27.9%                | 36.7%                |
| Permanently Unable          | 33.1% | 41.6%                | 26.2%                | 32.2%                |
| <b>Employment Income</b>    |       |                      |                      |                      |
| Receiving                   | 19.3% | 36.3%                | 29.3%                | 33.6%                |
| None                        | 80.7% | 39.3%                | 32.4%                | 28.4%                |
| <b>Education Level</b>      |       |                      |                      |                      |
| Less than Secondary         | 43.3% | 36.0%                | 30.0%                | 34.0%                |
| Secondary Grad              | 17.3% | 48.6%                | 30.2%                | 21.2%                |
| Some Post-Secondary         | 11.0% | 30.6%                | 20.5%                | 48.9%                |
| Post-Secondary Grad         | 28.4% | 35.6%                | 24.0%                | 40.4%                |
| <b>Earnings Exemptions</b>  |       |                      |                      |                      |
| Level 1 (>\$300)            | 44.7% | 42.2%                | 23.6%                | 34.2%                |
| Level 2 (\$200 - \$300)     | 39.4% | 35.5%                | 31.0%                | 33.5%                |
| Level 3 (<\$200)            | 1.9%  | 29.4%                | 23.6%                | 47.0%                |
| Level 4 (\$0)               | 14.0% | 29.1%                | 29.3%                | 41.7%                |
| <b>Assets Cat</b>           |       |                      |                      |                      |
| Low (<\$600)                | 42.1% | 42.9%                | 22.0%                | 35.2%                |
| Medium (\$1000-1500)        | 54.2% | 33.3%                | 30.3%                | 36.4%                |
| High (>\$3000)              | 3.8%  | 37.6%                | 44.2%                | 18.2%                |
| <b>Number of Conditions</b> |       |                      |                      |                      |
| None                        | 19.0% | 49.4%                | 32.2%                | 18.4%                |
| One                         | 20.6% | 43.7%                | 32.7%                | 23.6%                |
| Two                         | 21.1% | 31.3%                | 31.7%                | 37.0%                |
| Three                       | 16.5% | 41.2%                | 21.6%                | 37.2%                |
| Four or more                | 22.8% | 25.1%                | 18.4%                | 56.5%                |

| <b>Chronic Conditions</b> |       |       |       |       |
|---------------------------|-------|-------|-------|-------|
| Asthma                    | 19.5% | 33.5% | 23.8% | 42.8% |
| Back Problems             | 39.9% | 33.9% | 21.7% | 44.5% |
| Hypertension              | 24.5% | 27.2% | 20.9% | 51.9% |
| Migraines                 | 19.1% | 33.6% | 20.7% | 45.7% |
| COPD                      | 12.1% | 36.2% | 30.2% | 33.6% |
| Diabetes                  | 16.6% | 28.6% | 28.1% | 43.3% |
| Heart disease             | 8.9%  | 25.7% | 25.6% | 48.8% |
| GI Ulcers                 | 9.0%  | 24.1% | 28.8% | 47.2% |
| Stroke effects            | 2.9%  | 29.7% | 24.9% | 45.4% |
| Urinary incontinence      | 11.1% | 36.9% | 18.7% | 44.4% |
| Bowel Disorder            | 9.6%  | 40.5% | 15.5% | 44.0% |
| Mood Disorder             | 33.2% | 28.8% | 23.9% | 47.3% |
| Anxiety Disorder          | 27.6% | 28.6% | 20.3% | 51.1% |

### **6.3 – Income**

Income is strongly associated with food security status, and the incomes reported by our sample follow this association. Amongst food secure respondents, the mean income was \$15,040 annually, with a median income of \$12,000. For moderately food insecure respondents, the mean income was lower at \$13,114 per year, but the median remained at \$12,000. Amongst severely food insecure respondents, the mean income was the lowest, at \$12,276 per year, and the median income was also reduced to \$10,350.

### **6.4 – Age and Sex of Respondents**

Our sample had a higher prevalence of older adults, with over a third of respondents between the ages of 46 to 55 and another quarter of respondents aged 55 to 64. The respondents were split roughly equally between male and female adults (54.5% vs 45.5%). However, while their rates of moderate food insecurity were comparable, 40% of women reported of severe food insecurity, compared to only 30% of men. Thus the opposite effect was seen in the rates of food security, as only 32% of women were food secure, compared to over 41% of men (Table 6.1).

### **6.5 – Highest Level of Education Attained**

Over 40% of respondents had achieved less than a high school graduation, and the prevalence of food insecurity among them was 64.0%. Conversely, over a quarter of

respondents had obtained a post-secondary degree, and had a food insecurity rate of 64.4%. However, the highest rates of food insecurity were found among amongst respondents who had completed some post-secondary without graduation. The lowest rate of food insecurity was found amongst those who had graduated secondary school only – at 51.4%, this was significantly lower than all the other educational categories (Table 6.1).

## **6.6 – Home Ownership and Rural Urban Residences**

The proportion of respondents who owned their primary residence varied considerably by province (Table 6.2). The highest rates of home ownership were found in the Atlantic provinces – 40% in New Brunswick and 26% Newfoundland and Labrador. Conversely, the only other Atlantic province – Nova Scotia – had one of the lowest rates of home ownership.

As expected, the rate of home ownership overall was much higher in rural areas, as 53.5% of respondents residing in a region with a population of less than 1000 individuals owned their homes. Comparatively, only 7.7% of respondents living in urban areas were residing in homes that they owned. However within each province, the association between rural residence and home ownership was not constant. It held true for some provinces, such as New Brunswick, which had both the highest rates of home ownership and rural residents, but the opposite was also true, as Alberta had both the lowest proportion of rural residents and the third-highest rate of home owners.

## **6.7 – Aboriginal Status**

The highest proportion of Aboriginal respondents was found in Saskatchewan, where over half identified as Inuit, Métis, or First Nations (Table 6.2). The second highest proportion of Aboriginal respondents was found in Manitoba, where 27.3% of respondents identified as being of Aboriginal status. The lowest percentage of Aboriginal respondent was found in Quebec, with a mere 2.6% claiming Aboriginal status. It must be noted that these numbers may not represent the actual Aboriginal population in each province, as the CCHS does not cover residents of Aboriginal reserves. In addition, respondents were asked to self-identify as Aboriginal, which may not agree with the qualifications required by the federal government to obtain Aboriginal financial benefits. Overall, there was a marginal difference in food

security statuses: for those who had declared an Aboriginal status, 58.4% were either moderately or severely food insecure, and for the non-Aboriginal respondents, 63.0% were experiencing food insecurity.

### **6.8 – Employment Income**

All provincial income assistance programs require recipients to partake in employment activities, whether through working, seeking employment, or participating in training programs or continuing education. This is intended to guide their transition back to the workforce while decreasing their dependency on assistance. All provinces allow recipients to keep a portion of their earnings in order to supplement their assistance benefits and increase their financial independence. Though social assistance was the main source of income over the last 12 months, respondents were asked if they had received any other income from salaries, wages, or self-employment. The highest proportion of employment income was found in Manitoba, where over a third of respondents reported wages, salary, or self-employment income. It was lowest in Newfoundland at only 6.12%, perhaps reflecting the limited employment available in the small coastal province (Table 6.2).

**Table 6.2 - Sociodemographic Variables by Province**

| Province         | Home Ownership |        | Population Centre |       | Aboriginal Status |              | Wages/Self-Employment |              |
|------------------|----------------|--------|-------------------|-------|-------------------|--------------|-----------------------|--------------|
|                  | Owned          | Rented | Urban             | Rural | Declared          | Not Declared | Reported              | Not Reported |
| Newfoundland     | 26.3%          | 73.7%  | 72.4%             | 27.6% | 16.4%             | 83.6%        | 6.1%                  | 93.9%        |
| Nova Scotia      | 8.5%           | 91.5%  | 74.9%             | 25.1% | 9.2%              | 90.9%        | 16.7%                 | 83.3%        |
| New Brunswick    | 40.0%          | 60.0%  | 58.8%             | 41.2% | 10.5%             | 89.5%        | 19.3%                 | 80.7%        |
| Ontario          | 7.1%           | 92.9%  | 87.2%             | 12.9% | 2.6%              | 97.4%        | 25.1%                 | 74.9%        |
| Quebec           | 8.6%           | 91.4%  | 92.4%             | 7.6%  | 10.3%             | 89.7%        | 13.5%                 | 86.5%        |
| Manitoba         | 2.1%           | 97.9%  | 89.4%             | 10.6% | 27.3%             | 72.7%        | 35.9%                 | 64.1%        |
| Saskatchewan     | 6.1%           | 93.9%  | 89.0%             | 11.0% | 56.6%             | 43.4%        | 20.0%                 | 80.0%        |
| Alberta          | 19.0%          | 81.0%  | 92.3%             | 7.7%  | 14.8%             | 85.2%        | 20.1%                 | 79.9%        |
| British Columbia | 9.7%           | 90.3%  | 90.8%             | 9.2%  | 18.1%             | 81.9%        | 19.5%                 | 80.5%        |

## **Chapter 7 – Province of Residence and Food Insecurity**

### **7.1 – Introduction**

This chapter compares the food security status of the respondents across provinces, examining the odds of experiencing moderate-severe or severe food insecurity in each province compared to Ontario. We chose Ontario as our province of reference due to the comparatively generous social assistance policies provided through Ontario Works and the Ontario Disability Support Program. In addition, Ontario had the second-highest rate of food security at 43.4%, behind only Newfoundland and Labrador.

### **7.2 – Results**

#### **7.2.1 – Moderate-Severe Food Insecurity**

Using an unadjusted model, social assistance recipients in Nova Scotia (OR 2.64, CI 1.19 – 5.84), Saskatchewan (OR 2.81, CI 1.31 – 6.00), and British Columbia (OR 1.74, CI 1.02 – 2.95) showed an increased likelihood of experiencing moderate or severe food insecurity compared to Ontario (Table 7.1). When sociodemographic factors are added to the model, only Nova Scotia (OR 2.28, CI 1.03 – 5.05) and Saskatchewan (OR 3.11, CI 1.30 – 7.48) remained significantly more likely to experience moderate or severe food insecurity. In addition, New Brunswick and British Columbia showed borderline significant effects for food insecurity.

#### **7.2.2 – Severe Food Insecurity**

In comparison to the reference province of Ontario, there were no significant differences found in the likelihood of severe food insecurity amongst the eight other provinces. This was true for both the unadjusted model and when socio-demographic variables were controlled for in the model (Table 7.1).

### **7.3 – Discussion**

Given the observed elevated odds of food insecurity observed among social assistance recipients in Nova Scotia compared to Ontario, it is interesting to compare the policies in these two provinces. Ontario and Nova Scotia structure their social assistance programs

similarly: an income assistance program for temporary recipients, and a long-term disability programs for those with persistent barriers to employment. Compared to Ontario Works, the annual benefit rate received under Nova Scotia's Employment Support and Income Assistance Programs was \$1000 lower (\$7259 vs \$8225). However, recipients in Nova Scotia were able to amass \$1000 in liquid assets while still remaining eligible for social assistance, whereas those in Ontario would be considered ineligible after reaching \$600's worth. In addition, recipients who were employed in Nova Scotia were allowed to keep the first \$150 of their net monthly earnings, above which another 30% remained free from financial assessment. In contrast, employed recipients in Ontario had their net earnings reduced by 50% starting from the first dollar.

When comparing the two provinces' disability assistance programs – the Ontario Disability Support Program and Nova Scotia's Services for Persons with Disabilities – recipients with disabilities in Ontario are granted higher assistance rates than those in Nova Scotia. There was a difference of nearly \$4000 between the yearly benefit rates in Ontario compared to Nova Scotia in 2012 (\$13,772 vs \$9970, respectively). Ontario recipients with disability also had an advantage regarding asset limits: while the asset limit in Nova Scotia is \$1000 whether or not the recipient has a disability, Ontarians with disabilities are allowed up to \$5000 in liquid assets. This \$1000 limit is one of the lowest among disability programs, as the only lower asset limit is found in Prince Edward Island, which was not included in our analysis.

Differences in disability programs might account for the observed differences in food insecurity among recipients in these two provinces, but we have no way of knowing what proportion of the respondents in each province received disability benefits. However, via reports published by the Ontario Ministry of Community and Social Services, we can observe that over half of social assistance beneficiaries received the Ontario Disability Support Program in both 2011 and 2012 (Table 3.4). Unfortunately, the Nova Scotia Department of Community Services does not provide comparable data on the breakdown of number of recipients by type of program.

The higher likelihood of food insecurity among respondents in Saskatchewan compared to Ontario may also relate to provincial policy differences. In contrast to most other provinces, Saskatchewan has three levels of social assistance programs: Transitional Employment Allowance (TEA), the Saskatchewan Assistance Program (SAP), and the Saskatchewan Assured Income for Disability (SAID) Program. The TEA is designed for short-term assistance for those experiencing temporary barriers to work, and is only granted for a maximum of three months. The SAP is for applicants requiring longer assistance, but differentiates between those who are fully employable compared to those partially employable (due to limited skills or poor work history) or unemployable (due to a mental or physical disability). Respondents with limited employability have higher earnings exemptions before becoming subject to financial needs consideration.

Together, the TEA and SAP accounted for an average of 90% of social assistance recipients per month in Saskatchewan in 2011 and 88% in 2012. The Saskatchewan Department of Social Services does not distinguish between these programs in their yearly social assistance reports.

Lastly, the SAID is for recipients with severe and long-term disabilities causing impaired physical and/or mental functioning. First established in 2009, the SAID did not include independently living recipients until June 2012. Recipients of the SAID constituted an average of 10.0% of all social assistance recipients in Saskatchewan in 2011, and 11.9% in 2012. This slight increase may be attributed to the fact that independently living recipients were permitted into the program starting June of that year. Though while SAP identified recipients with disabilities and provided slightly more generous benefits for their increased needs, there was no specific program targeted towards recipients with disabilities in Saskatchewan until this point.

Two additional provinces that showed borderline significant effects for moderate-severe food insecurity: New Brunswick and British Columbia (Table 7.1). New Brunswick had the lowest benefit rates overall for both income and disability assistance, which may explain the observed effect. However, the small sample size of New Brunswick (1.9% of the total

sample) may have prevented this association from achieving significance. British Columbia was one of the only provinces to set a separate, lower liquid asset limit for applicants to social assistance (\$150) compared to the limit for its recipients. This requirement would have ensured that only those individuals in the direst financial constraints would be eligible for social assistance. Though the separate applicant asset limit was eliminated in October 2012, the majority of our respondents from British Columbia would have been subject to it when applying for social assistance.

#### **7.4 – Summary**

The two provinces that showed a higher likelihood of food insecurity compared to Ontario after controlling for relevant sociodemographic factors were Nova Scotia and Saskatchewan. Though we are unable to account for the type of social assistance each respondent is receiving, it appears that the effect observed for Saskatchewan may be partly due to the lack of a disability assistance program in the province. In regards to Nova Scotia, the low threshold for liquid assets among disability recipients may be affecting their ability to accumulate resources and to deal with budget shocks.

**Table 7.1 – Odds of Food Insecurity in Relation to Sociodemographic Characteristics**

|                          | Secure vs. Moderate or Severe |      |        |      |         |      |        |      | Secure or Moderate vs. Severe |      |        |      |         |      |        |      |
|--------------------------|-------------------------------|------|--------|------|---------|------|--------|------|-------------------------------|------|--------|------|---------|------|--------|------|
|                          | Model 1                       |      |        |      | Model 2 |      |        |      | Model 1                       |      |        |      | Model 2 |      |        |      |
|                          | p                             | OR   | 95% CI |      | p       | OR   | 95% CI |      | p                             | OR   | 95% CI |      | p       | OR   | 95% CI |      |
| <b>Province</b>          | .034                          | 1.0  | -      | -    | .056    | 1.0  | -      | -    | .208                          | 1.0  | -      | -    | .151    | 1    | -      | -    |
| Ontario                  | .482                          | 0.76 | 0.35   | 1.64 | .486    | 0.74 | 0.32   | 1.72 | .132                          | 0.43 | 0.14   | 1.29 | .116    | 0.40 | 0.13   | 1.25 |
| Newfoundland             | .017                          | 2.64 | 1.19   | 5.84 | .036    | 2.25 | 1.06   | 4.80 | .338                          | 1.54 | 0.64   | 3.73 | .707    | 1.17 | 0.51   | 2.71 |
| Nova Scotia              | .052                          | 1.84 | 0.99   | 3.41 | .058    | 1.97 | 0.98   | 3.95 | .143                          | 1.63 | 0.85   | 3.14 | .185    | 1.63 | 0.79   | 3.37 |
| New Brunswick            | .200                          | 1.36 | 0.85   | 2.17 | .389    | 1.23 | 0.77   | 1.98 | .747                          | 0.91 | 0.50   | 1.64 | .383    | 0.79 | 0.47   | 1.33 |
| Quebec                   | .414                          | 1.64 | 0.50   | 5.36 | .573    | 1.39 | 0.44   | 4.35 | .110                          | 0.40 | 0.13   | 1.23 | .063    | 0.33 | 0.10   | 1.06 |
| Manitoba                 | .008                          | 2.80 | 1.31   | 6.00 | .011    | 3.11 | 1.30   | 7.48 | .303                          | 1.53 | 0.68   | 3.44 | .324    | 1.53 | 0.66   | 3.55 |
| Saskatchewan             | .328                          | 1.37 | 0.73   | 2.56 | .346    | 1.37 | 0.71   | 2.62 | .984                          | 0.99 | 0.49   | 1.99 | .945    | 0.98 | 0.47   | 2.02 |
| Alberta                  | .041                          | 1.74 | 1.02   | 2.95 | .052    | 1.69 | 0.99   | 2.88 | .354                          | 1.27 | 0.76   | 2.13 | .589    | 1.16 | 0.68   | 1.98 |
| <b>Income</b>            |                               |      | .046   | 0.97 | 0.95    | 0.99 |        |      |                               |      |        |      | .154    | 0.98 | 0.95   | 1.01 |
| <b>Home Ownership</b>    |                               |      | .229   | 1.0  | -       | -    |        |      |                               |      |        |      | .010    | 1.0  | -      | -    |
| Own                      |                               |      | 1.48   | 0.78 | 2.80    |      |        |      |                               |      |        |      | 2.13    | 1.19 | 3.79   |      |
| Rent                     |                               |      |        |      |         |      |        |      |                               |      |        |      |         |      |        |      |
| <b>Population Centre</b> |                               |      | .104   | 1.0  | -       | -    |        |      |                               |      |        |      | .577    | 1.0  | -      | -    |
| Urban                    |                               |      | 0.66   | 0.40 | 1.09    |      |        |      |                               |      |        |      | 0.85    | 0.47 | 1.52   |      |
| Rural                    |                               |      |        |      |         |      |        |      |                               |      |        |      |         |      |        |      |
| <b>Education Level</b>   |                               |      | .131   | 1.0  | -       | -    |        |      |                               |      |        |      | .0007   | 1.0  | -      | -    |
| Secondary Grad           |                               |      | 0.57   | 1.68 | 0.99    | 2.87 |        |      |                               |      |        |      | .014    | 2.00 | 1.15   | 3.49 |
| Less than secondary      |                               |      | 0.033  | 2.10 | 1.06    | 4.16 |        |      |                               |      |        |      | .0001   | 3.75 | 1.90   | 7.41 |
| Some Post-Secondary      |                               |      | 0.066  | 1.67 | 0.97    | 2.90 |        |      |                               |      |        |      | .001    | 2.48 | 1.43   | 4.29 |
| Post-Secondary Grad      |                               |      |        |      |         |      |        |      |                               |      |        |      |         |      |        |      |

|                          |  |      |             |           |           |  |      |             |           |           |
|--------------------------|--|------|-------------|-----------|-----------|--|------|-------------|-----------|-----------|
| <b>Aboriginal Status</b> |  | .218 | 1.0<br>0.71 | -<br>0.41 | -<br>1.22 |  | .528 | 1.0<br>0.85 | -<br>0.50 | -<br>1.43 |
| Declared                 |  |      |             |           |           |  |      |             |           |           |
| Not Declared             |  |      |             |           |           |  |      |             |           |           |
| <b>Ability to Work</b>   |  | .323 | 1.0<br>0.81 | -<br>0.54 | -<br>1.23 |  | .149 | 1.0<br>0.73 | -<br>0.48 | -<br>1.12 |
| Able                     |  |      |             |           |           |  |      |             |           |           |
| Unable                   |  |      |             |           |           |  |      |             |           |           |
| <b>Other Income</b>      |  | .787 | 1.0<br>0.92 | -<br>0.51 | -<br>1.67 |  | .889 | 1.0<br>0.94 | -<br>0.42 | -<br>2.14 |
| None                     |  |      |             |           |           |  |      |             |           |           |
| From Employment          |  |      |             |           |           |  |      |             |           |           |
| <b>Age</b>               |  | .101 | 0.93        | 0.86      | 1.01      |  | .715 | 1.02        | 0.93      | 1.11      |
| Male                     |  |      |             |           |           |  |      |             |           |           |
| Female                   |  |      |             |           |           |  |      |             |           |           |
| <b>Sex</b>               |  | .032 | 1.0<br>1.51 | -<br>1.04 | -<br>2.19 |  | .077 | 1.0<br>1.46 | -<br>0.96 | -<br>2.23 |
| Male                     |  |      |             |           |           |  |      |             |           |           |
| Female                   |  |      |             |           |           |  |      |             |           |           |

Note: All variables for which results are presented were included in the relevant model.

## **Chapter 8 – Sociodemographic Results**

### **8.1 – Introduction**

This chapter presents our analyses of the sociodemographic variables associated with vulnerability to food insecurity amongst households reliant on social assistance. We included all variables associated with food insecurity in the general population, as well as two variables affecting eligibility and benefit rates among social assistance recipients.

### **8.2 – Results**

#### **8.2.1 – Moderate-Severe Food Insecurity**

Out of the socio-demographic factors that were included in Model 2 (Table 7.1), only the respondent's income and highest level of education were significantly associated with the likelihood of moderate or severe food insecurity. Predictably, those with higher incomes were less likely to be food insecure, accounting for a 3% decrease in the likelihood of moderate or severe food insecurity for every \$1000 increase in income (OR 0.97, CI 0.95 – 0.99).

Compared to the reference category of secondary graduation, those who had obtained some post-secondary education without graduation (OR 2.10, CI 1.06 – 4.16) were more likely to experience food insecurity (Table 7.1). While the age of the respondent was not significantly associated with food insecurity, being a female compared to a male adult on social assistance increased the likelihood of experiencing food insecurity (OR 1.51, CI 1.04 – 2.19).

Other variables such as living in a rural versus urban area, not having declared Aboriginal status, being permanently unable to work, and receiving income from employment in the last 12 months showed lower odds of food insecurity, but these results were not significant. In contrast, renting versus owning one's home was associated with higher odds of food insecurity, but this again did not reach significance.

#### **8.2.2 – Severe Food Insecurity**

Amongst the socio-economic predictors of severe food insecurity, education was once again a significant predictor. All categories of education level had higher odds of severe food insecurity compared to a secondary school graduation, no matter if the respondents had completed less than secondary school (OR 2.0, CI 1.15 – 3.49), had some post-secondary education (OR 3.75, CI 1.90 – 7.41), or graduated from post-secondary program (OR 2.48, CI 1.43 – 4.29). In addition, respondents who rented their homes were over twice as likely to be severely food insecure compared to respondents who owned their homes (OR 2.13, CI 1.19 – 3.79).

The other variables included in the model – income, Aboriginal status, ability to work, employment income, age, and sex – were not found to be significantly associated with the likelihood of severe food insecurity (Table 7.1).

### **8.3 – Discussion**

Predictably, income was tied to food insecurity in our analysis, as higher income appears to have a negative association with the likelihood of moderate or severe food insecurity. However, the protective effects of higher income disappear regarding severe food insecurity, although severely food insecure respondents have lower mean and median incomes than food secure or moderately insecure respondents (Table 6.1). This indicates that other factors besides monetary income may be affecting an individual's ability to manage their household resources and subsequently, their food security status.

One such factor may be home ownership, which was associated with severe food insecurity even though the type of population region was also controlled for in the model. Given the financial constraints required to qualify for social assistance, any homes owned by recipients must have been acquired prior to receiving assistance. As such, it might reflect prior family circumstances, such as inheritance or divorce. In any case, the ownership of a home insulates individuals from the rental market – indicating lower shelter costs. It must be noted that while most provinces consider the ownership of a primary residence exempt from the financial needs assessment, Quebec takes the value of the home into consideration, so that a home valued above \$90,000 will result in benefits being scaled back at 2%.

In addition, respondents who owned their homes are likely to be protected from the effects of housing instability, a less severe but more widespread form of homelessness. Kushel et al. (2005) defined housing instability as “difficulty paying rent, spending more than 50% of household income on housing, having frequent moves, living in overcrowded conditions, or doubling up with friends and relatives.” In their analysis of the 1999 National Survey of America’s Families of adults aged 18 to 64 with total family incomes less than 200% of the federal poverty level, the authors found that housing instability, along with food insecurity, were both independently associated with barriers to health care and increased use of acute-care services – indicating poorer health.

The report on the State of Homeless in Canada 2013 defines a range of housing circumstances, from unsheltered, to emergency sheltered (overnight shelters), provisionally accommodated (temporary or insecure accommodation), and at risk of homelessness (precarious current living situation) (Gaetz, Donaldson, Richter, & Gulliver, 2013). The authors attribute homelessness as the cumulative impact of three classes of causes: structural factors, systems failures, and individual and relational factors. Structural factors can include lack of affordable housing, insufficient income, and inadequate health supports. Systems failures cause homelessness when other services of care and support fall through, such as with individuals leaving mental health and addictions facilities without proper discharge planning. Lastly, individual factors include personal circumstances, including mental illness, poverty, family violence, and traumatic events (Gaetz et al., 2013).

The most consistent association with food insecurity was observed for highest level of education of the respondent, which was significantly associated to both moderate/severe food security and severe food insecurity only. Wahl (2010) proposed that the highest level of education obtained may have an effect on social capital, which is lower among those with fewer years of education or employment experience. Social capital is important in terms of coping perceptions, sense of control, and self-esteem, and may thus impact quality of life. However, we did not see a clear dose-response relationship among this social assistance population. Instead, those who had completed secondary school only were at lowest risk of

food insecurity. In comparison to this group, those who had not finished high school or had only some post-secondary education were consistently at higher risk of food insecurity, while respondents with a post-secondary degree were at higher risk for severe food insecurity only.

While income is, plainly, related to the amount of resources an individual has access to, severe food insecurity may also be affected by the individual's ability to manage those resources under constrained circumstances. Thus education and home ownership may be significant regarding severe food insecurity, even though income is not, as they are related to the individual's ability to manage their household food situation. The effects observed due to education may be attributed to the high prevalence of mental health conditions among respondents with post-secondary education, which is further discussed in Section 10.5.

The two variables added to this model addressing the social assistance population – employment income and ability to work – had no effect on the likelihood of food insecurity. All provincial income assistance programs require recipients to partake in employment activities to guide their transition back to the workforce. In addition, social assistance recipients are encouraged to find employment as a way to supplement their benefits. Thus this variable was entered as a binary variable, indicating the presence or absence of employment income, to test the idea that working would have a protective effect against food insecurity.

The lack of significant findings may relate to our inability to characterize respondents' employment in terms of either the duration of employment or the amount of income garnered from employment. Due to our inability to know the length of time that respondents were receiving social assistance, we were also unable to distinguish between those who received employment income before, after, or between periods of receiving social assistance; and those who worked while receiving assistance.

In addition, any earnings received under social assistance may reduce benefits. Though each province sets exemptions for monthly earnings (summarized in Table 3.3), these may not be sufficient to allow for a significant improvement of the adult's financial resources. Lastly,

the percentage of social assistance recipients who claimed employment income may be partly a product of the employment opportunities in each province as opposed to simply due to policy.

The “ability to work” variable identified respondents who reported being permanently unable to work. This is not directly comparable to the disability assistance qualification criteria in most provinces, but this variable was used as a crude proxy for those who may be receiving disability assistance, in the absence of more information. However, there were no significant differences found in the association with food security between respondents who claimed to be permanently unemployable versus those employable. This may be due to the fact that this variable depended on the respondent’s self-assessment, which may not concur with the decision regarding disability made by their social assistance caseworker.

#### **8.4 – Summary**

Overall, this analysis indicates that the majority of socio-demographic factors associated with food insecurity in the general population are not significant amongst our sample of social assistance recipients. Only income, home ownership, and level of education showed some association to food insecurity within this sample. This may be due to the fact that these respondents, though heterogeneous in terms of these variables, represent an overwhelmingly vulnerable population.

## **Chapter 9 – Provincial Policies and Food Insecurity**

### **9.1 - Introduction**

If the effect of province remains even after accounting for sociodemographic factors, it can be hypothesized that the variation in food security status caused by the variation in social assistance policy. This chapter presents our analysis of two major components of social assistance policy: earnings exemptions and asset limits.

### **9.2 – Earnings Exemptions**

This analysis classified the provinces into 4 levels according to the maximum monthly earnings exemption allowed in the income assistance program. The group with the highest monthly earnings exemption at over \$300 per month consisted of Ontario, Manitoba, and Alberta. Next, Newfoundland, Nova Scotia, and Quebec allowed recipients to supplement benefits by up to \$200-\$300 monthly through employment income. New Brunswick, in the third category, allowed recipients to keep up to \$200 per month until they were ineligible for benefits. Lastly, neither Saskatchewan nor British Columbia granted any earning exemptions.

Compared to the group with the highest earning exemptions, respondents in the provinces that do not grant any exemptions, Saskatchewan and British Columbia, were more likely to report moderate or severe food insecurity (OR 1.80, CI 1.11 – 2.91). There were no significant differences observed for the likelihood of moderate-severe food insecurity between respondents in provinces classified into the other 2 groups of earnings exemptions compared to the highest one, or in the likelihood of severe food insecurity only for all categories (Table 9.1).

### **9.3 – Asset Limits**

For this analysis, provinces were grouped by the level of liquid assets recipients were allowed to possess while receiving income assistance. The lowest category consisted of Ontario and Alberta, both of which allowed slightly less than \$600 in liquid assets (though Ontario raised this limit to \$606 in July 2012). The middle category consisted of provinces

with limits ranging from \$1000 - \$1500, including Nova Scotia, New Brunswick, Quebec, Saskatchewan, and British Columbia. Lastly, Newfoundland and Manitoba comprised the highest category with asset limits of \$3000 and \$4000, respectively.

Compared to the lowest category, there were no differences in the odds of moderate-severe food insecurity. However, when looking at the likelihood of severe food insecurity only, the highest asset limit category showed a significantly lower association with severe food insecurity compared to the lowest category (OR 0.37, CI 0.16 – 0.89). Thus recipients in Newfoundland and Manitoba had significantly reduced odds compared to recipients in Ontario and Alberta (Table 9.1).

This analysis does not distinguish those provinces that have a different asset limit for applicants compared to recipients. In British Columbia, for example, applicants prior to October 2012 must have had assets below \$150 in order to begin social assistance, but once they began receiving assistance were allowed to increase their assets up to \$2000. This affects eligibility, as these applicants must be in extremely severe financial constraints to qualify for social assistance.

#### **9.4 – Discussion**

The finding that a lack of earnings exemptions is associated with higher odds of moderate-severe food insecurity should be interpreted with caution, given that the benefit being examined here would be applicable only for those respondents who are employed. For example, only 20% of respondents in Saskatchewan and 19.5% in British Columbia reported receiving any employment income over the previous 12 months. These rates seem to be about average amongst the provinces, as in most provinces 15-20% of social assistance recipients reported employment income (Table 6.2). Notable exceptions include Newfoundland, which had only 6% of respondents receiving employment income, and Manitoba, in which over a third of respondents said the same.

In addition, a respondent's ability to find and retain employment is also related to their education, age, health— all of which are significantly tied to food insecurity. Though education and age are controlled for in this model, the effect of receiving employment income is still significant. Other variables that affect the likelihood of employment, such as marketable skills, employment record, and unemployment rate were not controlled for in this analysis.

However, an increased level of assets appears to have a protective effect against the odds of experiencing severe food insecurity. These limits were established in order to allow recipients to maintain an amount of liquid assets to build up their financial independence. This is consistent with the literature showing that food insecurity is more likely to be experienced by low-income individuals who lack a buffer against unexpected financial impacts and must therefore make choices regarding their basic necessities (Gundersen & Gruber, 2001; Leete & Bania, 2010).

## **9.5 – Summary**

These analyses of provincial policies seem to suggest that the additional earnings received from employment may be associated with lower odds of moderate-severe food insecurity. Again, this should be taken with a note of caution, considering that only a minority of respondents in all provinces reported any employment income in the last 12 months. However, when it comes to severe food insecurity only, it appears that an increased level of assets has a protective effect.

**Table 9.1 – Odds of Food Security by Provincial Policies**

| Model 3 - Province and Sociodemographics and Age/Sex |                               |      |        |      |      |      |        |                               |      |      |        |      |       |      |        |      |
|--|-------------------------------|------|--------|------|------|------|--------|-------------------------------|------|------|--------|------|-------|------|--------|------|
|  | Secure vs. Moderate or Severe |      |        |      |      |      |        | Secure or Moderate vs. Severe |      |      |        |      |       |      |        |      |
|  | p                             | OR   | 95% CI |      | p    | OR   | 95% CI |                               | p    | OR   | 95% CI |      | p     | OR   | 95% CI |      |
| <b>Earnings Exemption</b>                            | .047                          | 1.0  | -      | -    |      |      |        |                               | .142 | 1.0  | -      | -    |       |      |        |      |
| 1 – \$300+   |                               |      |        |      |      |      |        |                               |      |      |        |      |       |      |        |      |
| 2 – \$2-300  | .342                          | 1.24 | 0.79   | 1.95 |      |      |        |                               | .710 | 0.90 | 0.52   | 1.5  |       |      |        |      |
| 3 – less than \$200                                  | .051                          | 1.96 | 0.99   | 3.85 |      |      |        |                               | .075 | 1.89 | 0.94   | 3.82 |       |      |        |      |
| 4 – \$0  | .017                          | 1.80 | 1.11   | 2.91 |      |      |        |                               | .234 | 1.34 | 0.83   | 2.15 |       |      |        |      |
| <b>Asset Limits</b>                                  |                               |      |        |      | .193 | 1.0  | -      | -                             |      |      |        |      | .076  | 1.0  | -      | -    |
| Low (<\$600)   |                               |      |        |      |      | .071 | 1.44   | 0.97                          | 2.13 |      |        |      | .930  | .98  | 0.63   | 1.53 |
| Medium (\$1000 - \$1500)                             |                               |      |        |      |      | .769 | 1.14   | 0.47                          | 2.76 |      |        |      | .026  | .37  | 0.16   | 0.89 |
| <b>Income</b>  | .029                          | 0.97 | 0.95   | 0.99 | .028 | 0.97 | 0.95   | 0.99                          | .188 | 0.98 | 0.95   | 1.01 | .140  | 0.98 | 0.94   | 1.01 |
| <b>Home Ownership</b>                                | .184                          | 1.0  | -      | -    | .226 | 1.0  | -      | -                             | .009 | 1.0  | -      | -    | .018  | 1.0  | -      | -    |
| Own  |                               |      |        |      |      | 1.45 | 0.80   | 2.64                          |      |      |        |      |       |      |        |      |
| Rent   |                               | 1.51 | 0.82   | 2.78 |      |      |        |                               |      |      |        |      |       |      |        |      |
| <b>Population Centre</b>                             | .115                          | 1.0  | -      | -    | .097 | 1.0  | -      | -                             | .596 | 1.0  | -      | -    | .606  | 1.0  | -      | -    |
| Urban  |                               |      |        |      |      | 0.66 | 0.40   | 1.08                          |      |      |        |      |       |      |        |      |
| Rural  |                               | 0.67 | 0.41   | 1.10 |      |      |        |                               |      |      |        |      |       |      |        |      |
| <b>Education Level</b>                               | .151                          | 1.0  | -      | -    | .151 | 1.0  | -      | -                             | .001 | 1.0  | -      | -    | .001  | 1.0  | -      | -    |
| Secondary Graduation                                 |                               |      |        |      |      | 1.62 | 0.95   | 2.76                          |      |      |        |      |       |      |        |      |
| Less than secondary                                  | .068                          | 1.66 | 0.96   | 2.85 | .079 |      |        |                               | .029 | 1.87 | 1.07   | 3.27 | .028  | 1.88 | 1.07   | 3.31 |
| Some Post-Secondary                                  | .039                          | 2.07 | 1.04   | 4.13 | .038 | 2.08 | 1.04   | 4.13                          |      | 3.54 | 1.80   | 6.97 | .0002 | 3.58 | 1.82   | 7.06 |
| Post-Secondary Grad                                  | .064                          | 1.68 | 0.97   | 2.92 | .063 | 1.68 | 0.97   | 2.90                          |      | 2.45 | 1.42   | 4.23 | .001  | 2.45 | 1.42   | 4.23 |

|                          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| <b>Aboriginal Status</b> | .298 | 1.0  | -    |      | .480 | 1.0  | -    | -    | .483 | 1.0  | -    | -    | .884 | 1.0  | -    | -    |
| Declared                 |      | 0.76 | 0.45 | 1.28 |      | 0.83 | 0.49 | 1.40 |      | 0.84 | 0.51 | 1.38 |      | 0.96 | 0.57 | 1.62 |
| Not Declared             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| <b>Age</b>               | .058 | 0.93 | 0.86 | 1.00 | .056 | 0.93 | 0.86 | 1.00 | .835 | 1.01 | 0.93 | 1.09 | .888 | 1.01 | 0.93 | 1.09 |
| <b>Sex</b>               | .037 |      |      |      | .031 |      |      |      | .081 |      |      |      | .082 |      |      |      |
| Male                     |      | 1.0  | -    | -    |      | 1.0  | -    | -    |      | 1.0  | -    | -    |      | 1.0  | -    | -    |
| Female                   |      | 1.50 | 1.03 | 2.20 |      | 1.51 | 1.04 | 2.19 |      | 1.49 | 0.95 | 2.34 |      | 1.47 | 0.95 | 2.28 |

## **Chapter 10 – Chronic Conditions**

### **10.1 – Introduction**

This chapter presents the descriptive statistics and regression models analyzing the associations between chronic disease and food insecurity. We began with a continuous variable representing the total number of conditions the respondent is experiencing, as a way of accounting for co-morbidity and overall health status. Next, we modelled each condition as a binary variable (presence or absence of the condition). For those conditions showing a significant association, we conducted condition specific analyses modelling relevant provincial policies, while controlling for significant sociodemographic variables.

### **10.2 – Descriptive Statistics**

The majority of respondents in our sample had been diagnosed with at least one chronic condition expected to last 6 months or longer: only 19% of respondents reported having been diagnosed with no conditions, while over 22% had been diagnosed with 4 or more conditions (Table 10.1).

As expected, the number of conditions diagnosed increased with respondent age, as the higher age ranges reported greater number of conditions. To contrast between the youngest and oldest respondents (18-25 vs. 55-65 years): 37.4% of the youngest group had no conditions at all, while 7.5% had been diagnosed with 4 or more conditions. Comparatively, among the oldest group of respondents, only 9.22% had zero conditions, while 35.9% reported 4 or more conditions.

Female respondents reported higher numbers of conditions compared to male respondents: while a quarter of men did not have any conditions, this applied to less than 10% of women. 36% of women reported 4 or more conditions, while only 23% of men did the same.

Respondents who reported being currently employed, absent from a job, or looking for employment in the previous 4 weeks reported fewer chronic conditions compared to those who were permanently unable to work. Almost 43% of respondents who reported being permanently unable to work had 4 or more chronic conditions, while only 7% had none

(Table 10.1). As this analysis was limited to 13 conditions, respondents who claimed permanent inability to work may have done so due to other conditions not assessed on the CCHS.

**Table 10.1 – Sociodemographic Variables by Number of Chronic Conditions**

|                        | Number of Chronic Conditions |       |       |       |           |
|------------------------|------------------------------|-------|-------|-------|-----------|
|                        | 0                            | 1     | 2     | 3     | 4 or more |
| <b>Overall Sample</b>  | 19.0%                        | 20.6% | 21.1% | 16.5% | 22.8%     |
| <b>Sex</b>             |                              |       |       |       |           |
| Male                   | 25.4%                        | 17.6% | 18.7% | 15.4% | 23.0%     |
| Female                 | 9.1%                         | 16.1% | 22.7% | 15.8% | 36.4%     |
| <b>Age Range</b>       |                              |       |       |       |           |
| 18 - 25                | 37.4%                        | 36.1% | 11.5% | 7.6%  | 7.5%      |
| 26 - 35                | 29.2%                        | 17.9% | 16.2% | 19.0% | 17.8%     |
| 36 - 45                | 25.2%                        | 18.3% | 15.9% | 13.3% | 27.4%     |
| 46 - 55                | 12.3%                        | 13.9% | 24.8% | 14.1% | 34.9%     |
| 55 - 64                | 9.2%                         | 12.5% | 22.5% | 20.0% | 35.9%     |
| <b>Ability to Work</b> |                              |       |       |       |           |
| Able                   | 23.3%                        | 18.6% | 21.3% | 14.5% | 22.3%     |
| Permanently Unable     | 7.2%                         | 13.5% | 19.0% | 17.6% | 42.7%     |

The most commonly reported conditions were back problems, mood disorders, anxiety disorders, and hypertension – all of which exceeded a 20% prevalence rate within this sample (Table 10.2).

**Table 10.2 – Prevalence of Chronic Conditions**

| Condition     | Percent of Sample | Weighted N |
|---------------|-------------------|------------|
| Asthma        | 19.5%             | 54,015     |
| Back Problems | 39.9%             | 110,800    |
| Hypertension  | 24.5%             | 67,865     |
| COPD          | 12.1%             | 33,517     |
| Diabetes      | 16.6%             | 45,982     |

|                           |       |        |
|---------------------------|-------|--------|
| Heart disease             | 8.9%  | 24,653 |
| Migraines                 | 19.1% | 52,907 |
| Stomach/intestinal Ulcers | 9.0%  | 24,930 |
| Stroke effects            | 2.9%  | 8,033  |
| Urinary incontinence      | 11.1% | 30,747 |
| Bowel Disorder            | 9.6%  | 26,592 |
| Mood Disorder             | 33.2% | 91,964 |
| Anxiety Disorder          | 27.6% | 76,452 |

### 10.3 - Number of Conditions

#### 10.3.1 – Moderate-Severe Food Insecurity

In comparison to a reference group of respondents who did not report any conditions, those with only one condition were not at significantly higher odds of reporting moderate-severe food insecurity (OR 1.33, CI 0.74 – 2.40). Yet when compared to this same reference group, respondents who had been diagnosed with two (OR 2.32, CI 1.22 – 4.40) or four or more (OR 3.37, CI 1.91 – 5.96) conditions were significantly more likely to report moderate-severe food insecurity. While respondents with 3 conditions showed higher odds of food insecurity, this association was not significant (OR 1.50, CI 0.82 – 2.74) (Table 10.3).

#### 10.3.2 – Severe Food Insecurity

Amongst this sample of social assistance recipients, the odds of experiencing severe food insecurity were positively associated with the number of chronic conditions diagnosed. While again the presence of only one condition was not significantly different from zero conditions, respondents who had two (OR 2.63, CI 1.24 – 5.57), three (OR 2.67, CI 1.37 – 5.21), or four or more (OR 5.97, CI 3.27 – 10.79) conditions showed increasingly greater odds of severe food insecurity than those without any conditions (Table 10.3).

**Table 10.3 – Odds of Food Insecurity in Relation to Number of Conditions**

| Model 4 – Province, Sociodemographics, and Number of Conditions |                               |      |        |      |                               |       |        |      |
|---|-------------------------------|------|--------|------|-------------------------------|-------|--------|------|
|   | Secure vs. Moderate or Severe |      |        |      | Secure or Moderate vs. Severe |       |        |      |
|   | p                             | OR   | 95% CI |      | p                             | OR    | 95% CI |      |
| <b>Province</b>   | .079                          |      |        |      | .446                          |       |        |      |
| Ontario   |                               | 1.0  | -      | -    |                               | 1.0   | -      | -    |
| Newfoundland  | .658                          | 0.81 | 0.32   | 2.07 | .210                          | 0.44  | 0.12   | 1.59 |
| Nova Scotia   | .033                          | 2.29 | 1.07   | 4.87 | .908                          | 1.05  | 0.47   | 2.36 |
| New Brunswick   | .115                          | 1.80 | 0.87   | 3.71 | .411                          | 1.36  | 0.65   | 2.85 |
| Quebec  | .230                          | 1.34 | 0.83   | 2.16 | .588                          | 0.87  | 0.52   | 1.45 |
| Manitoba  | .409                          | 1.64 | 0.51   | 5.33 | .138                          | 0.42  | 0.14   | 1.32 |
| Saskatchewan  | .007                          | 3.16 | 1.38   | 7.27 | .252                          | 1.64  | 0.70   | 3.84 |
| Alberta   | .599                          | 1.21 | 0.60   | 2.42 | .607                          | 0.80  | 0.35   | 1.85 |
| British Columbia  | .059                          | 1.69 | 0.98   | 2.91 | .605                          | 1.15  | 0.68   | 1.95 |
| <b>Income</b>   | .049                          | 0.97 | 0.95   | 1.00 | .187                          | 0.98  | 0.94   | 1.01 |
| <b>Home Ownership</b>   |                               |      |        |      |                               |       |        |      |
| Own   | .434                          | 1.0  | -      | -    | .039                          | 1.0   | -      | -    |
| Rent  |                               | 1.32 | 0.66   | 2.65 |                               | 1.84  | 1.03   | 3.28 |
| <b>Population Centre</b>  |                               |      |        |      |                               |       |        |      |
| Urban   | .049                          | 1.0  | -      |      | .320                          | 1.0   | -      | -    |
| Rural   |                               | 0.62 | 0.38   | 0.99 |                               | 0.77  | 0.45   | 1.30 |
| <b>Education Level</b>  | .471                          |      |        |      | .016                          |       |        |      |
| Secondary Graduation  |                               | 1.0  | -      | -    |                               | 1.0   | -      | -    |
| Less than secondary   | .183                          | 1.45 | 0.84   | 2.49 | .067                          | 1.67  | 0.96   | 2.90 |
| Some Post-Secondary   | .159                          | 1.62 | 0.83   | 3.15 | .002                          | 2.731 | 1.43   | 5.21 |
| Post-Secondary Grad   | .205                          | 1.45 | 0.82   | 2.56 | .013                          | 98    | 1.15   | 3.40 |
| <b>Aboriginal Status</b>  |                               |      |        |      |                               |       |        |      |
| Not Declared  | .257                          | 1.0  | -      | -    | .531                          | 1.0   | -      | -    |
| Declared  |                               | 0.73 | 0.42   | 1.26 |                               | 0.85  | 0.50   | 1.43 |
| <b>Ability to Work</b>  |                               |      |        |      |                               |       |        |      |
| Able  | .095                          | 1.0  | -      | -    | .016                          | 1.0   | -      | -    |
| Unable  |                               | 0.69 | 0.45   | 1.07 |                               | 0.58  | 0.37   | 0.90 |
| <b>Other Income</b>   |                               |      |        |      |                               |       |        |      |
| None  | .770                          | 1.0  | -      | -    | .855                          | 1.0   | -      | -    |
| From Employment   |                               | 0.92 | 0.53   | 1.60 |                               | 1.07  | 0.50   | 2.29 |
| <b>Age</b>  | .013                          | 0.90 | 0.83   | 0.98 | .514                          | 0.97  | 0.89   | 1.06 |
| <b>Sex</b>  |                               |      |        |      |                               |       |        |      |
| Male  | .142                          | 1.0  | -      | -    | .320                          | 1.0   | -      | -    |
| Female  |                               | 1.33 | 0.91   | 1.93 |                               | 1.24  | 0.82   | 1.87 |

| <b>Number of Conditions</b> | .0002  |      |      |      | <.0001 | 1.0  |      |       |
|-----------------------------|--------|------|------|------|--------|------|------|-------|
| None                        |        | 1.0  | -    | -    |        | 1.0  | -    | -     |
| One                         | .340   | 1.33 | 0.74 | 2.40 | .265   | 1.43 | 0.76 | 2.69  |
| Two                         | .010   | 2.32 | 1.22 | 4.40 | .012   | 2.63 | 1.24 | 5.57  |
| Three                       | .193   | 1.50 | 0.82 | 2.74 | .004   | 2.67 | 1.37 | 5.21  |
| Four or more                | <.0001 | 3.37 | 1.91 | 5.96 | <.0001 | 5.94 | 3.27 | 10.79 |

## 10.4 – Individual Conditions

To explore the relationship between individual conditions and food security status, the diagnosis or absence of each condition was entered individually as a binary variable in a regression model including age, sex, the aforementioned socio-demographic variables, and number of other conditions. For this analysis, mood and anxiety conditions were combined to form a mental health condition variable. This resulted in Model 5 being repeated 12 times, once for each of the conditions analyzed. Out of these twelve, only two conditions were significantly associated with food insecurity: hypertension and mental health (data analysis not shown). To explore factors associated with vulnerability to food insecurity among respondents with these conditions, subgroup analyses were performed. The logistic regression Model 6 was conducted amongst only those respondents who had been diagnosed with hypertension or mental health conditions to identify significant associations with food insecurity. Next, Model 7 replaced individual provinces with categorical variables representing Drug Coverage and Special Diet Allowances (Table 10.4), while controlling for significant socio-demographic variables. In addition, because of the prominence of diabetes in the food insecurity literature and its targeting for Special Dietary Allowances, models 6 and 7 were run for respondents reporting this condition as well, even though it was not one that emerged as significant in the original models. These analyses are discussed in detail in the following sections.

### 10.4.1 - Hypertension

In an analysis of the entire sample, respondents with hypertension showed higher odds for moderate-severe food insecurity (OR 2.03, CI 1.26 – 3.27), even after controlling for the number of other conditions diagnosed. This association remained when looking at the odds of severe food insecurity only (OR 2.44, CI 1.43 – 4.18).

As it is a diet-related condition, hypertension is understandably linked to food insecurity. All provincial allowances for hypertensive diets and “low-sodium” diets were considered relevant towards hypertensive respondents. Each province’s allowances were categorized according to their monthly rate (Table 10.4) in order to facilitate an analysis of the potential effects of these benefits on the odds of food insecurity and severe food insecurity.

**Table 10.4 – Special Diet Allowance for Hypertension by Province**

| High (\$60+)            | Medium (\$10 – \$45)   | Low (\$0)               |
|-------------------------|--|-------------------------|
| Newfoundland<br>Ontario | Nova Scotia<br>Manitoba<br>Saskatchewan<br>Alberta<br>British Columbia | New Brunswick<br>Quebec |

i. **Likelihood of Moderate-Severe Food Insecurity**

When running Model 6 amongst only respondents who had been diagnosed with hypertension, the only relevant sociodemographic predictors of moderate-severe food insecure was higher income and type of population centre. For every \$1000 increase in income, the respondent’s likelihood of moderate-severe food insecure was reduced by 5% (OR 0.95, CI 0.90 – 0.99). Likewise, respondents who resided in a rural region (population density less than 1000) showed lower odds of moderate-severe food insecurity (OR 0.41, CI 0.18 – 0.95) compared to those living in urban areas (Table 10.5, Model 6).

These two sociodemographic variables, along with age and sex of the respondent, were controlled for in the subsequent analysis of provincial Special Diet Allowances. The number of conditions other than hypertension reported by the respondent was also included.

Compared to the reference group of the highest allowance, respondents in both the Medium (OR 4.01, CI 1.33 – 12.06) and Low (OR 4.57, CI 1.26 – 16.61) categories were significantly more likely to experience moderate-severe food insecurity (Table 10.5, Model 7). Thus in comparison to Newfoundland and Ontario, which provided more than \$60/month for hypertensive recipients, recipients in all other provinces had a greater likelihood of experiencing moderate-severe food insecurity. In addition, residents of provinces requiring a

\$2 co-payment per prescription were more likely to experience moderate-severe food insecurity compared to residents in provinces granted full coverage.

## **ii. Likelihood of Severe Food Insecurity**

When modeling all sociodemographics for the likelihood of severe food insecurity among hypertensive respondents only, living in a rural region compared to an urban area again appeared to be protective (OR 0.27, CI 0.11 – 0.71). In addition, respondents who rented their homes were more likely to experience severe food insecurity compared to those who owned their residences (OR 2.83, CI 1.18 – 6.79). However, just like in the overall sample, increased income did not have a protective effect against severe food insecurity among hypertensive respondents (Table 10.5, Model 6).

Subsequently, when modeling provincial policy (Table 10.5, Model 7), no significant differences were observed in the likelihood of severe food insecurity by level of Special Diet Allowance. Level of drug coverage also did not show a significant association with severe food insecurity. In this model, age, sex, income, rural/urban residence, home ownership, and number of other conditions were controlled for.

**Table 10.5 – Odds of Food Insecurity Among Hypertensive Respondents**

| Hypertension          | Secure vs. Moderate or Severe |      |        |      |         |      |        | Secure or Moderate vs. Severe |      |      |        |         |      |      |        |       |
|-----------------------|-------------------------------|------|--------|------|---------|------|--------|-------------------------------|------|------|--------|---------|------|------|--------|-------|
|                       | Model 6                       |      |        |      | Model 7 |      |        | Model 6                       |      |      |        | Model 7 |      |      |        |       |
|                       | p                             | OR   | 95% CI |      | p       | OR   | 95% CI |                               | p    | OR   | 95% CI |         | p    | OR   | 95% CI |       |
| <b>Province</b>       |                               |      |        |      |         |      |        |                               |      |      |        |         |      |      |        |       |
| Ontario               | .446                          | 1.0  | -      | -    |         |      |        |                               | .512 | 1.0  | -      | -       |      |      |        |       |
| Newfoundland          | .151                          | 0.32 | 0.07   | 1.51 |         |      |        |                               | .333 | 0.43 | 0.08   | 2.35    |      |      |        |       |
| Nova Scotia           | .405                          | 1.82 | 0.44   | 7.51 |         |      |        |                               | .352 | 2.07 | 0.45   | 9.50    |      |      |        |       |
| New Brunswick         | .448                          | 1.62 | 0.47   | 5.67 |         |      |        |                               | .242 | 2.10 | 0.61   | 7.28    |      |      |        |       |
| Quebec                | .410                          | 1.48 | 0.59   | 3.72 |         |      |        |                               | .037 | 2.79 | 1.06   | 7.35    |      |      |        |       |
| Manitoba              | .903                          | 0.88 | 0.10   | 7.47 |         |      |        |                               | .961 | 1.06 | 0.12   | 9.56    |      |      |        |       |
| Saskatchewan          | .068                          | 4.54 | 0.90   | 23.0 |         |      |        |                               | .841 | 1.21 | 0.19   | 7.93    |      |      |        |       |
| Alberta               | .718                          | 1.29 | 0.32   | 5.20 |         |      |        |                               | .624 | 1.39 | 0.37   | 5.20    |      |      |        |       |
| British Columbia      | .542                          | 1.49 | 0.44   | 4.76 |         |      |        |                               | .489 | 1.49 | 0.48   | 4.59    |      |      |        |       |
| <b>Drug Coverage</b>  |                               |      |        |      | .138    | 1.0  | -      | -                             |      |      |        |         | .926 | 1.0  | -      | -     |
| Full                  |                               |      |        |      | .048    | 3.06 | 1.01   | 9.26                          |      |      |        |         | .838 | 1.16 | 0.27   | 4.95  |
| \$2                   |                               |      |        |      | .973    | 1.02 | 0.43   | 2.42                          |      |      |        |         | .737 | 1.20 | 0.42   | 3.41  |
| <b>Special Diet</b>   |                               |      |        |      | .036    | 1.0  | -      | -                             |      |      |        |         | .272 | 1.0  | -      | -     |
| High                  |                               |      |        |      | .013    | 4.01 | 1.33   | 12.06                         |      |      |        |         | .439 | 1.77 | 0.42   | 7.51  |
| Medium                |                               |      |        |      | .021    | 4.57 | 1.26   | 16.61                         |      |      |        |         | .146 | 3.32 | 0.66   | 16.74 |
| <b>Income</b>         | .046                          | 0.95 | 0.90   | 0.99 | .055    | 0.95 | 0.91   | 1.00                          | .131 | 0.96 | 0.90   | 1.01    | .208 | 0.96 | 0.91   | 1.02  |
| <b>Home Ownership</b> |                               |      |        |      |         |      |        |                               |      |      |        |         |      |      |        |       |
| Own                   | .112                          | 1.0  | -      | -    |         |      |        |                               | .020 | 1.0  | -      | -       | .010 | 1.0  | -      | -     |
| Rent                  |                               | 2.00 | 0.85   | 4.71 |         |      |        |                               |      | 2.83 | 1.18   | 6.79    |      | 3.44 | 1.34   | 8.80  |

|                          |      |       |      |      |      |             |      |      |      |             |      |      |       |             |      |      |       |
|--------------------------|------|-------|------|------|------|-------------|------|------|------|-------------|------|------|-------|-------------|------|------|-------|
| <b>Population Centre</b> | .037 | 1.0   | -    | -    | .013 | 1.0<br>0.36 | -    | -    | .008 | 1.0<br>0.27 | -    | -    | .040  | 1.0<br>0.31 | -    | -    |       |
| Urban                    |      | 0.41  | 0.18 | 0.95 |      |             |      |      |      | 0.10        | 0.71 |      |       |             |      |      |       |
| Rural                    |      |       |      |      |      |             |      |      |      |             |      |      |       |             |      |      |       |
| <b>Education Level</b>   | .774 | 1.0   | -    | -    |      |             |      |      | .504 | 1.0         | -    | -    |       |             |      |      |       |
| Secondary Grad           |      | 0.901 | 0.37 | 3.10 |      |             |      |      |      | 0.496       | 1.47 | 0.49 | 4.45  |             |      |      |       |
| Less than sec.           |      |       |      |      |      |             |      |      |      | 0.138       | 2.81 | 0.72 | 11.05 |             |      |      |       |
| Some Post-Sec.           |      | 0.344 | 0.50 | 7.51 |      |             |      |      |      | 0.338       | 1.66 | 0.59 | 4.64  |             |      |      |       |
| Post-Sec.Grad            |      | 0.856 | 1.10 | 0.39 | 3.14 |             |      |      |      |             |      |      |       |             |      |      |       |
| <b>Aboriginal Status</b> | .160 | 1.0   | -    | -    |      |             |      |      | .939 | 1.0         | -    | -    |       |             |      |      |       |
| Declared                 |      | 0.47  | 0.16 | 1.35 |      |             |      |      |      | 1.04        | 0.36 | 3.02 |       |             |      |      |       |
| Not Declared             |      |       |      |      |      |             |      |      |      |             |      |      |       |             |      |      |       |
| <b>Age</b>               | .189 | 0.83  | 0.64 | 1.09 | .192 | 0.83        | 0.63 | 1.10 | .221 | 0.86        | 0.68 | 1.09 | .213  | 0.86        | 0.69 | 1.09 |       |
| <b>Sex</b>               | .648 | 1.0   | -    | -    | .778 | 1.0<br>1.11 | -    | -    | .707 | 1.0<br>0.87 | -    | -    | .612  | 1.0<br>0.82 | -    | -    |       |
| Male                     |      | 1.19  | 0.57 | 2.51 |      |             |      |      |      | 0.41        | 1.84 |      |       |             |      |      |       |
| Female                   |      |       |      |      |      |             |      |      |      |             |      |      |       |             |      |      |       |
| <b># of Other Cond.</b>  | .034 |       |      |      | .036 | 1.0         | -    | -    | .553 | 1.0         | -    | -    | .439  |             |      |      |       |
| None                     |      | 1.0   | -    | -    |      |             |      |      |      |             |      |      | 1.0   | -           | -    | -    |       |
| One                      |      | 0.82  | 0.20 | 3.42 | .786 | 0.82        | 0.19 | 3.55 | .733 | 1.38        | 0.22 | 8.62 | .686  | 1.46        | 0.24 | 9.01 |       |
| Two                      |      | 0.36  | 0.11 | 1.20 | .081 | 0.34        | 0.10 | 1.14 | .840 | 1.17        | 0.25 | 5.47 | .732  | 1.30        | 0.29 | 5.97 |       |
| Three                    |      | 0.521 | 1.47 | 0.45 | 4.81 | .564        | 1.41 | 0.44 | 4.48 | .317        | 2.10 | 0.49 | 8.99  | .233        | 2.37 | 0.57 | 9.76  |
| Four or more             |      | 0.770 | 1.20 | 0.35 | 4.06 | .794        | 1.18 | 0.35 | 4.00 | .255        | 2.29 | 0.55 | 9.51  | .165        | 2.67 | 0.67 | 10.71 |

#### 10.4.2 – Mood and Anxiety Disorders

A respondent who had been diagnosed with an anxiety or mood disorder was significantly more likely to report severe food insecurity (OR 1.65, CI 1.07 – 2.54), and showed a borderline effect for likelihood of moderate-severe food insecurity (OR 1.43, CI 0.98 – 2.09) compared to those without a mental health condition.

Upon repeating this model amongst only respondents who had been diagnosed with a mental health condition, there were few significant associations between any sociodemographic variables and food insecurity. Respondents in Saskatchewan had significantly elevated odds of food insecurity compared to Ontario. Increased age of the respondent appeared to be protective against the likelihood of experiencing moderate-severe food insecurity. In addition, having both a mood or anxiety condition, as opposed to only one, appeared to double the respondent's likelihood of experiencing severe food insecurity (Table 10.6, Model 6). These effects persisted in the subsequent model that controlled for provincial drug coverage policies. However, there were no significant differences in the likelihood of moderate-severe or severe food insecurity observed between the different levels of drug coverage (Table 10.6, Model 7).

**Table 10.6 – Odds of Food Insecurity Among Respondents with Mental Health Conditions**

| Mental Health            | Secure vs. Moderate or Severe |      |        |       |         |      |        | Secure or Moderate vs. Severe |      |      |        |         |      |      |        |      |
|--------------------------|-------------------------------|------|--------|-------|---------|------|--------|-------------------------------|------|------|--------|---------|------|------|--------|------|
|                          | Model 6                       |      |        |       | Model 7 |      |        | Model 6                       |      |      |        | Model 7 |      |      |        |      |
|                          | p                             | OR   | 95% CI |       | p       | OR   | 95% CI |                               | p    | OR   | 95% CI |         | p    | OR   | 95% CI |      |
| <b>Province</b>          |                               |      |        |       |         |      |        |                               |      |      |        |         |      |      |        |      |
| Ontario                  | .024                          | 1.0  | -      | -     |         |      |        |                               | .153 | 1.0  | -      | -       |      |      |        |      |
| Newfoundland             | .082                          | 0.19 | 0.03   | 1.24  |         |      |        |                               | .020 | 0.08 | 0.01   | 0.66    |      |      |        |      |
| Nova Scotia              | .427                          | 1.61 | 0.50   | 5.25  |         |      |        |                               | .442 | 0.64 | 0.21   | 1.98    |      |      |        |      |
| New Brunswick            | .500                          | 1.39 | 0.53   | 3.64  |         |      |        |                               | .438 | 1.43 | 0.58   | 3.52    |      |      |        |      |
| Quebec                   | .691                          | 0.88 | 0.48   | 1.63  |         |      |        |                               | .382 | 0.75 | 0.40   | 1.42    |      |      |        |      |
| Manitoba                 | .525                          | 0.68 | 0.21   | 2.23  |         |      |        |                               | .403 | 0.63 | 0.21   | 1.86    |      |      |        |      |
| Saskatchewan             | .005                          | 6.07 | 1.75   | 21.13 |         |      |        |                               | .363 | 1.74 | 0.53   | 5.77    |      |      |        |      |
| Alberta                  | .791                          | 0.88 | 0.33   | 2.31  |         |      |        |                               | .137 | 0.49 | 0.19   | 1.26    |      |      |        |      |
| British Columbia         | .105                          | 1.91 | 0.87   | 2.19  |         |      |        |                               | .962 | 0.98 | 0.47   | 2.03    |      |      |        |      |
| <b>Drug Coverage</b>     |                               |      |        |       | .662    | 1.0  | -      | -                             |      |      |        |         | .488 | 1.0  | -      | -    |
| Full                     |                               |      |        |       | .975    | 0.99 | 0.61   | 1.63                          |      |      |        |         | .235 | 1.35 | 0.82   | 2.22 |
| \$2                      |                               |      |        |       | .386    | 1.42 | 0.65   | 3.11                          |      |      |        |         | .852 | 1.08 | 0.49   | 2.38 |
| <b>Income</b>            | .163                          | 0.96 | 0.90   | 1.02  | .118    | 0.96 | 0.91   | 1.01                          | .206 | 0.96 | 0.89   | 1.03    | .123 | 0.95 | 0.89   | 1.01 |
| <b>Home Ownership</b>    |                               |      |        |       |         |      |        |                               |      |      |        |         |      |      |        |      |
| Own                      | .896                          | 1.0  | -      | -     |         |      |        |                               | .051 | 1.0  | -      | -       |      |      |        |      |
| Rent                     |                               | 1.08 | 0.36   | 3.21  |         |      |        |                               | 2.04 | 0.99 | 4.17   |         |      |      |        |      |
| <b>Population Centre</b> |                               |      |        |       |         |      |        |                               |      |      |        |         |      |      |        |      |
| Urban                    | .743                          | 1.0  | -      | -     |         |      |        |                               | .823 | 1.0  | -      | -       |      |      |        |      |
| Rural                    |                               | 1.13 | 0.55   | 2.30  |         |      |        |                               | 1.09 | 0.52 | 2.26   |         |      |      |        |      |

|                          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| <b>Education Level</b>   | .709 | 1.0  | -    | -    |      |      |      |      | .606 | 1.0  | -    | -    |      |      |      |      |
| Secondary Grad           |      |      |      |      |      |      |      |      | .650 | 1.21 | 0.54 | 2.72 |      |      |      |      |
| Less than sec.           | .317 | 1.52 | 0.67 | 3.47 |      |      |      |      | .199 | 1.89 | 0.72 | 5.02 |      |      |      |      |
| Some Post-Sec.           | .441 | 1.50 | 0.53 | 4.25 |      |      |      |      | .596 | 1.25 | 0.54 | 2.89 |      |      |      |      |
| Post-Sec. Grad           | .245 | 1.68 | 0.70 | 4.01 |      |      |      |      |      |      |      |      |      |      |      |      |
| <b>Aboriginal Status</b> |      |      |      |      |      |      |      |      | .945 | 1.0  | -    | -    |      |      |      |      |
| Declared                 | .991 | 1.0  | -    | -    |      |      |      |      | 0.97 | 0.97 | 0.46 | 2.06 |      |      |      |      |
| Not Declared             |      | 0.99 | 0.43 | 2.32 |      |      |      |      |      |      |      |      |      |      |      |      |
| <b>Age</b>               | .004 | 0.84 | 0.74 | 0.95 | .002 | 0.83 | 0.74 | 0.94 | .202 | 0.93 | 0.82 | 1.04 | .083 | 0.91 | 0.82 | 1.01 |
| <b>Sex</b>               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Male                     | .995 | 1.0  | -    | -    | .958 | 1.0  | -    | -    | .447 | 1.0  | -    | -    | .341 | 1.0  | -    | -    |
| Female                   |      | 1.00 | 0.61 | 1.64 |      | 0.99 | 0.60 | 1.62 |      | 0.97 | 0.46 | 2.06 |      | 0.79 | 0.49 | 1.28 |
| <b># of Conditions</b>   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 1                        | .232 | 1.0  | -    | -    | .103 | 1.0  | -    | -    | .005 | 1.0  | -    | -    | .004 | 1.0  | -    | -    |
| Both Types               |      | 1.35 | 0.82 | 2.22 |      | 1.38 | 0.85 | 2.25 |      | 2.03 | 1.23 | 3.34 |      | 2.08 | 1.27 | 3.39 |
| <b># of Other Cond.</b>  | .116 |      |      |      | .192 |      |      |      | .045 |      |      |      | .053 |      |      |      |
| None                     |      | 1.0  | -    | -    |      | 1.0  | -    | -    |      | 1.0  | -    | -    |      | 1.0  | -    | -    |
| One                      | .607 | 0.80 | 0.35 | 1.86 | .597 | 0.80 | 0.35 | 1.82 | .978 | 1.01 | 0.45 | 2.27 | .964 | 1.02 | 0.46 | 2.24 |
| Two                      | .508 | 1.34 | 0.57 | 3.16 | .482 | 1.35 | 0.58 | 3.15 | .182 | 1.74 | 0.77 | 3.95 | .160 | 1.77 | 0.80 | 3.93 |
| Three                    | .182 | 1.79 | 0.76 | 4.21 | .212 | 1.72 | 0.73 | 4.05 | .129 | 1.83 | 0.84 | 3.98 | .119 | 1.83 | 0.86 | 3.89 |
| Four or more             | .093 | 2.04 | 0.89 | 4.69 | .098 | 2.07 | 0.88 | 4.88 | .008 | 2.85 | 1.31 | 6.20 | .008 | 3.04 | 1.34 | 6.90 |

### 10.4.3 – Diabetes

Diabetes, the condition most often tied to food insecurity in the literature, showed no association with moderate-severe (OR 1.64, CI 0.92 – 2.89) or severe food insecurity (OR 1.39, CI 0.68 – 2.82) in the overall sample. However, because diabetes is the most commonly studied condition in association with food insecurity, we repeated the analyses among diabetics only (Table 10.8, Model 6). The only significant sociodemographic predictor of food insecurity among diabetics was residing in a rural compared to an urban region, as respondents in rural areas had a lower likelihood of severe food insecurity.

Diabetes, like hypertension, is a diet-related condition for which provinces have granted Special Diet Allowances. In some cases, the monthly rate for this allowance is based on the respondent's required daily caloric intake. For our analysis, rates were based on a standard 2000 calorie/day diet (Table 10.7).

**Table 10.7 - Special Diet Allowance for Diabetics by Province**

| <b>High (\$60+)</b>                 | <b>Medium (\$20 – \$40)</b>                                       | <b>Low (\$0)</b> |
|-------------------------------------|---|------------------|
| Newfoundland<br>Ontario<br>Manitoba | Nova Scotia<br>Saskatchewan Alberta<br>British Columbia<br>Quebec | New Brunswick    |

The subsequent model of provincial policies for diabetics included both the variables for Special Diet Allowance and Drug Coverage (Table 10.8, Model 7). No significant associations were observed between policies and the likelihood of experiencing moderate-severe food insecurity. However, the odds of severe food insecurity were significantly associated with level of Special Diet Allowance. Compared to the highest allowance category, both the Medium (OR 3.68, CI 1.18 – 11.52) and Low (OR 10.25, CI 1.18 – 89.32) levels showed higher likelihood of severe food insecurity. However, given the wide confidence intervals for these associations, this finding must be regarded with caution.

**Table 10.8 – Odds of Food Insecurity among Diabetic Respondents**

| Model 6 – Policies, Significant Sociodemographics and Number of Conditions |                               |      |        |       |         |      |        |                               |      |      |        |         |      |       |        |       |
|--|-------------------------------|------|--------|-------|---------|------|--------|-------------------------------|------|------|--------|---------|------|-------|--------|-------|
|  | Secure vs. Moderate or Severe |      |        |       |         |      |        | Secure or Moderate vs. Severe |      |      |        |         |      |       |        |       |
|  | Model 6                       |      |        |       | Model 7 |      |        | Model 6                       |      |      |        | Model 7 |      |       |        |       |
|  | p                             | OR   | 95% CI |       | p       | OR   | 95% CI |                               | p    | OR   | 95% CI |         | p    | OR    | 95% CI |       |
| <b>Province</b>  |                               |      |        |       |         |      |        |                               |      |      |        |         |      |       |        |       |
| Ontario  | .626                          | 1.0  | -      | -     |         |      |        |                               | .340 | 1.0  | -      | -       |      |       |        |       |
| Newfoundland   | .544                          | 2.47 | 0.13   | 45.48 |         |      |        |                               | .819 | 1.32 | 0.12   | 14.28   |      |       |        |       |
| Nova Scotia  | .760                          | 1.29 | 0.26   | 6.43  |         |      |        |                               | .682 | 0.69 | 0.12   | 3.99    |      |       |        |       |
| New Brunswick  | .446                          | 1.72 | 0.43   | 6.91  |         |      |        |                               | .346 | 1.96 | 0.49   | 7.91    |      |       |        |       |
| Quebec   | .022                          | 4.25 | 1.23   | 14.68 |         |      |        |                               | .099 | 3.02 | 0.81   | 11.22   |      |       |        |       |
| Manitoba   | .976                          | 1.03 | 0.16   | 6.79  |         |      |        |                               | .128 | 0.15 | 0.01   | 1.74    |      |       |        |       |
| Saskatchewan   | .825                          | 1.25 | 0.18   | 8.87  |         |      |        |                               | .525 | 1.94 | 0.25   | 14.91   |      |       |        |       |
| Alberta  | .829                          | 1.23 | 0.20   | 7.70  |         |      |        |                               | .186 | 3.83 | 0.53   | 27.95   |      |       |        |       |
| British Columbia   | .554                          | 1.70 | 0.29   | 9.88  |         |      |        |                               | .976 | 1.03 | 0.20   | 5.27    |      |       |        |       |
| <b>Drug Coverage</b>   |                               |      |        |       |         |      |        |                               |      |      |        |         |      |       |        |       |
| Full   |                               |      |        |       | .473    | 1.0  | -      | -                             |      |      |        |         | .282 | 1.0   | -      | -     |
| \$2  |                               |      |        |       | .450    | 0.60 | 0.16   | 2.26                          |      |      |        |         | .459 | 1.50  | 0.51   | 4.39  |
| \$4-5  |                               |      |        |       | .271    | 0.43 | 0.10   | 1.93                          |      |      |        |         | .210 | 0.34  | 0.06   | 1.83  |
| <b>Special Diet</b>  |                               |      |        |       |         |      |        |                               |      |      |        |         |      |       |        |       |
| High   |                               |      |        |       | .580    | 1.0  | -      | -                             |      |      |        |         | .044 | 1.0   | -      | -     |
| Medium   |                               |      |        |       | .300    | 1.95 | 0.55   | 6.89                          |      |      |        |         | .025 | 3.68  | 1.18   | 11.51 |
| Low  |                               |      |        |       | .607    | 1.74 | 0.21   | 14.15                         |      |      |        |         | .035 | 10.25 | 1.18   | 89.32 |
| <b>Income</b>  | .685                          | 0.99 | 0.92   | 1.05  | .806    | 0.99 | 0.92   | 1.06                          | .263 | 0.94 | 0.84   | 1.05    | .343 | 0.95  | 0.86   | 1.06  |
| <b>Home Ownership</b>  | .112                          | 1.0  | -      | -     |         |      |        |                               | .960 | 1.0  | -      | -       |      |       |        |       |
| Own  |                               | 2.64 | 0.80   | 8.73  |         |      |        |                               |      | 1.03 | 0.32   | 3.34    |      |       |        |       |
| Rent   |                               |      |        |       |         |      |        |                               |      |      |        |         |      |       |        |       |

|                          |      |             |           |           |      |      |      |       |      |             |           |           |      |       |             |           |           |
|--------------------------|------|-------------|-----------|-----------|------|------|------|-------|------|-------------|-----------|-----------|------|-------|-------------|-----------|-----------|
| <b>Population Centre</b> | .050 | 1.0<br>0.32 | -<br>0.10 | -<br>1.00 |      |      |      |       | .002 | 1.0<br>0.16 | -<br>0.05 | -<br>0.51 |      | .0008 | 1.0<br>0.16 | -<br>0.05 | -<br>0.46 |
| Urban                    |      |             |           |           |      |      |      |       | .318 | 1.0         | -         | -         |      |       |             |           |           |
| Rural                    |      |             |           |           |      |      |      |       | .196 | 2.44        | 0.63      | 9.43      |      |       |             |           |           |
| <b>Education Level</b>   | .377 | 1.0         | -         | -         |      |      |      |       | .206 | 2.86        | 0.56      | 14.54     |      |       |             |           |           |
| Secondary Grad           |      |             |           |           |      |      |      |       | .072 | 4.06        | 0.88      | 18.75     |      |       |             |           |           |
| Less than sec.           | .085 | 2.96        | 0.86      | 10.19     |      |      |      |       |      |             |           |           |      |       |             |           |           |
| Some Post-Sec.           | .275 | 2.35        | 0.51      | 10.90     |      |      |      |       |      |             |           |           |      |       |             |           |           |
| Post-Sec. Grad           | .227 | 2.57        | 0.56      | 11.84     |      |      |      |       |      |             |           |           |      |       |             |           |           |
| <b>Aboriginal Status</b> | .505 | 1.0         | -         | -         |      |      |      |       | .482 | 1.0         | -         | -         |      |       |             |           |           |
| Declared                 |      |             |           |           |      |      |      |       | .053 | 0.09        | 3.08      |           |      |       |             |           |           |
| Not Declared             |      | 1.50        | 0.46      | 4.94      |      |      |      |       |      |             |           |           |      |       |             |           |           |
| <b>Age</b>               | .247 | 0.82        | 0.59      | 1.14      | .249 | 0.84 | 0.62 | 1.13  | .364 | 0.88        | 0.66      | 1.16      | .480 | 0.90  | 0.68        | 1.20      |           |
| <b>Sex</b>               | .943 | 1.0         | -         | -         | .863 | 1.0  | -    | -     | .850 | 1.0         | -         | -         | .982 | 1.0   | -           | -         |           |
| Male                     |      |             |           |           |      | 1.09 | 0.41 | 2.91  |      | 0.91        | 0.32      | 2.57      |      | 1.01  | 0.39        | 2.66      |           |
| Female                   |      | 1.04        | 0.37      | 2.90      |      |      |      |       |      |             |           |           |      |       |             |           |           |
| <b># of Other Cond</b>   | .176 | 1.0         | -         | -         | .459 | 1.0  | -    | -     | .360 | 1.0         | -         | -         | .300 | 1.0   | -           | -         |           |
| None                     |      |             |           |           |      |      |      |       |      |             |           |           |      |       |             |           |           |
| One                      | .930 | 0.93        | 0.17      | 4.99      | .735 | 1.35 | 0.23 | 8.20  | .347 | 2.96        | 0.31      | 28.65     | .353 | 3.12  | 0.28        | 34.37     |           |
| Two                      | .472 | 0.56        | 0.11      | 2.74      | .514 | 0.59 | 0.12 | 2.91  | .362 | 2.44        | 0.36      | 16.57     | .389 | 2.46  | 0.32        | 19.12     |           |
| Three                    | .137 | 3.52        | 0.67      | 18.44     | .214 | 2.64 | 0.57 | 12.21 | .483 | 2.05        | 0.28      | 15.15     | .573 | 1.79  | 0.24        | 13.65     |           |
| Four or more             | .379 | 1.77        | 0.50      | 6.31      | .438 | 1.65 | 0.47 | 5.84  | .080 | 2.95        | 0.83      | 29.62     | .111 | 4.84  | 0.70        | 33.69     |           |

## **10.5 – Discussion**

Overall, the number of chronic conditions reported by a respondent was significantly tied to their likelihood of reporting both moderate-severe and severe food insecurity. While having one chronic condition did not seem to be enough of a risk factor to increase the odds of food insecurity, upwards of two or more conditions seemed to begin to impair an individual's ability to manage their household food situation. This is reflected accordingly in the increasing prevalence of moderate and severe food insecurity that follows an increased number of conditions (Table 6.1).

The odds of severe food insecurity according to number of conditions is consistent, as there is a gradient effect reflecting the burden of increasing conditions. However, in modelling the odds of moderate-severe food insecurity there is an anomaly, as having three conditions did not significantly increase the odds, while having only two conditions was significant. This may be due to the fact that respondents with three conditions were the smallest category, and that they had a high proportion of food secure and severely insecure individuals. Thus, the effect for moderate-severe food insecure may not have reached significance.

In terms of individual conditions, it was to be expected that mental health conditions would be significantly associated with food insecurity. This association has been consistently noted throughout the literature, though most of the data is cross-sectional in nature (Muldoon, 2013; Che & Chen, 2001). However, various pathways have been proposed to explain the ways in which mental health affects food insecurity, and vice versa. Hence the relationship between mental health and food insecurity has best been described as bi-directional.

Mental illness may limit an adult's ability to manage their household finances effectively in times of financial constraints (Heflin, 2007). This may be due to feelings of stress, anxiety, social isolation, and being overwhelmed (Huddleston-Casas, 2008). In addition, poor mental health presents a significant barrier in the respondent's ability to return to work, resulting in longer tenures on social assistance (Morris, 2005).

Though psychiatric medications are an effective method of managing chronic illnesses (Allin & Hurley, 2009; Sarma et al., 2007), the lack of significant differences in the likelihood of moderate-severe or severe food insecurity based on the amount of drug coverage co-payment suggests these differences were too small to be significant.

The presence of mental health diagnoses may be related to the effects of education observed, where those who had completed secondary school only were at lowest risk of food insecurity. In comparison to this group, those who had not finished high school or had only some post-secondary education were consistently at higher risk of food insecurity, while respondents with a post-secondary degree were at higher risk for severe food insecurity only. In our sample, secondary school graduates had the lowest prevalence of mental illness – both mood (24%) and anxiety disorders (21%) – compared to all other educational categories. On the other hand, these conditions were most commonly diagnosed among respondents with only some post-secondary education (44% had a mood disorder, 47% had an anxiety disorder) and those who had a post-secondary graduation (28% with mood disorders, 42% anxiety disorders) (Table 10.9). This may speak to the circumstances that led respondents with higher levels of education to have need of financial assistance. While our cross-sectional data precludes the ability to define a temporal relationship, it is reasonable to assume that the decline in mental health may have preceded the experience of food insecurity. In other words, poor mental health may counteract the protective effects of higher levels of education among social assistance recipients.

**Table 10.9 – Mental Health Conditions by Highest Level of Education**

| <b>Level of Education</b> | <b>Anxiety Disorder</b> | <b>Mood Disorder</b> |
|---------------------------|-------------------------|----------------------|
| Less than Secondary       | 25.3%                   | 28.4%                |
| Secondary Grad            | 20.9%                   | 24.2%                |
| Some Post-Secondary       | 47.4%                   | 44.4%                |
| Post-Secondary Grad       | 27.5%                   | 41.6%                |

While hypertension and diabetes are both considered diet-related conditions, only hypertension was significantly associated with food insecurity. While it appears that more generous diet allowances for hypertensive recipients have a protective effect against moderate-severe food insecurity, this effect disappears when predicting the likelihood of severe food insecurity. This concurs with the relationship between income level overall and severe food insecurity – indicating that the odds of severe food insecurity are not dependent solely on financial resources.

Though diabetes has been well-researched in relation to food insecurity, we did not observe an association between moderate-severe or severe food insecurity amongst this sample of single adults receiving social assistance. Though differences in provincial policy were significantly associated with the likelihood of severe food insecurity, these findings must be regarded with caution. The absence of a significant association between diabetes and food insecurity may indicate that given the awareness surrounding diabetes, provincial social assistance programs have established programs to provide support for diabetic patients to manage their condition. This includes providing diabetic equipment and supplies, including test strips, lancets, syringes, and blood glucose monitors.

Our analysis of drug coverage assumed that all provincial policies were alike, aside from their co-payment amounts. Yet each province independently evaluates medications for coverage eligibility, and those deemed appropriate are included in the Drug Formulary. We did not take into account the differences in medication available to respondents from each province. However, an analysis of drug formulary listings from 2006 by Morgan, Hanley, Raymond, and Blais (2009) found that the drugs covered were relatively consistent across provinces. Though they were independently regulated, Canadian provinces operated under an “implicit national drug formulary,” as all provincial formularies listed most of the top-selling medications.

This analysis was limited to a set list of physician-diagnosed conditions, but it is reasonable to believe that other measures of health would show the same association with food

insecurity among social assistance recipients. These include other conditions such as HIV, oral health, and social health.

### **10.6 – Summary**

The number of chronic conditions showed a dose-response relationship with the odds of both moderate-severe and severe food insecurity. In terms of individual conditions, only hypertension and mental illness were significantly associated with food insecurity. Modelling relevant policies for these conditions did not have an observable effect, except that a higher Special Diet Allowance may be protective against moderate-severe food insecurity among hypertensive respondents.

## **Chapter 11 – Food Insecurity, Health and Well-Being**

### **11.1 – Introduction**

The literature regarding the experience of food insecurity in the household encompasses several health-related behaviours and experiences that were measured on the CCHS, but not included in our regression analyses. Our intent in this chapter was to characterize social assistance recipients across a broad spectrum of self-reported measures of health and well-being by food security status. These factors were not included in our regression models since they are more likely to be consequences of food insecurity, whereas our regression analyses were an attempt to explore causation, albeit through the examination of associations in cross-sectional data.

Specifically, we examined the relation between respondents' food security status and their self-perceived health, pain and functional health, frequency of fruit and vegetable consumption, and body mass index. Weighted Rao-Scott Chi-square tests were conducted to test the association between food security status and each characteristic (Table 11.1).

### **11.2 – Self-Perceived Health**

A common measure of health in association with food insecurity has been the respondents' self-assessment (Vozoris & Tarasuk, 2004). More respondents in food insecure households rated their general health as fair or poor compared to those who were food secure. Amongst those with poor self-rated health, a large difference was observed between the moderate and severely food insecure individuals. A Chi-square test confirmed that the differences observed between the categories were significant ( $p = .002$ ).

When asked to rate their mental health status in particular, food insecure respondents reported fair or poor health in much higher rates compared to food secure respondents. Again, the differences observed by food security status were significant ( $p = .001$ ).

Accordingly, respondents who were food insecure also reported a higher number of mental health consultations in the previous 12 months – over 8.1% reported 20 or more visits,

indicating regular mental health care. While this is a promising statistic, it does not begin to cover the over 40% of respondents in this category that reported fair or poor mental health. There was also no significant difference in the rates of mental health care consultations by food security status.

### **11.3 – Pain and Functioning**

A higher proportion of moderately and severely food insecure respondents reported moderate to severe pain or discomfort compared to those food secure. In particular, over a quarter of severely food insecure respondents also experienced severe pain or discomfort. These pain ratings differed significantly between food security levels ( $p = .013$ ). In regards to the activities limited due to pain, over 30% of severely food insecure respondents indicated that their pain or discomfort prevented most activities, compared to only 19% of food secure respondents and 15% of the moderately food insecure.

### **11.4 – Daily Fruit and Vegetable Consumption**

Adults in food insecure households have a lower intake of fruits and vegetables, and subsequently, lower levels of micronutrient consumption (Kirkpatrick & Tarasuk, 2008a). This held true within our sample of social assistance respondents, as the frequency of fruit and vegetable consumption per day differed significantly by food security status ( $p = .001$ ).

### **11.5 – Body Mass Index (BMI)**

Food insecurity has been related to obesity in the United States (Seligman & Schillinger, 2010b). As research indicated that women in food insecure households were disproportionately affected by obesity, we stratified our sample by gender in regards to BMI. However, there were no significant differences in BMI by food security level for men or women observed. BMI has been validated for use in large-scale population studies, but might be inaccurate on an individual level due to variation in body composition. While alternate measures such as waist circumference might be a better indicator of disease risk factors, this information was not available on the CCHS.

## 11.6 – Summary

Even among the highly vulnerable social assistance population, there is still marked variation across a number of measures of health and well-being by food security status. Our findings indicate that food insecurity, particularly severe food insecurity, is associated with decreased quality of life within the social assistance population.

**Table 11.1 – Descriptive Statistics by Food Security Level**

|  | Food<br>Secure | Moderately<br>Insecure | Severely<br>Insecure | Pr > Chi<br>Sq |
|--|----------------|------------------------|----------------------|----------------|
| <b>General Self-Perceived Health</b>                           |                |                        |                      |                |
| Excellent  | 9.3%           | 4.3%                   | 4.9%                 |                |
| Very Good  | 14.5%          | 18.3%                  | 6.9%                 |                |
| Good   | 34.8%          | 28.8%                  | 25.4%                |                |
| Fair   | 25.8%          | 32.9%                  | 37.7%                |                |
| Poor   | 15.6%          | 15.7%                  | 25.2%                |                |
| <b>Self-Perceived Mental Health</b>                            |                |                        |                      |                |
| Excellent  | 19.3%          | 13.6%                  | 8.8%                 |                |
| Very Good  | 21.0%          | 24.8%                  | 16.0%                |                |
| Good   | 39.5%          | 34.4%                  | 32.1%                |                |
| Fair   | 16.0%          | 17.5%                  | 28.4%                |                |
| Poor   | 4.3%           | 9.7%                   | 14.7%                |                |
| <b>Number of Mental Health Consultations in last 12 months</b> |                |                        |                      |                |
| 0  | 68.1%          | 65.5%                  | 58.7%                |                |
| 1 to 10  | 19.5%          | 21.4%                  | 25.9%                |                |
| 11 to 20   | 8.9%           | 9.2%                   | 7.3%                 |                |
| 20 and over  | 3.4%           | 3.9%                   | 8.1%                 |                |
| <b>Pain/Discomfort</b>   |                |                        |                      |                |
| No Pain or Discomfort  | 61.1%          | 52.0%                  | 43.1%                |                |
| Mild   | 5.5%           | 8.1%                   | 5.0%                 |                |
| Moderate   | 18.7%          | 23.6%                  | 24.3%                |                |
| Severe   | 14.7%          | 16.3%                  | 27.7%                |                |
| <b>Pain Function</b>   |                |                        |                      |                |
| No Pain or Discomfort  | 60.1%          | 51.9%                  | 43.1%                |                |
| Prevents no activities   | 6.2%           | 5.7%                   | 5.0%                 |                |
| Prevents a few activities                                      | 7.6%           | 17.8%                  | 8.4%                 |                |
| Prevents some activities                                       | 7.3%           | 10.2%                  | 13.3%                |                |
| Prevents most activities                                       | 18.9%          | 14.5%                  | 30.2%                |                |

|                                      |       |       |       |  |
|--------------------------------------|-------|-------|-------|--|
| <b>Fruits and Vegetables per Day</b> |       |       |       |  |
| Less than 1 per day                  | 7.2%  | 8.2%  | 12.0% |  |
| 1-5 times per day                    | 59.6% | 70.9% | 67.1% |  |
| Over 5, up to 10                     | 22.0% | 15.6% | 14.8% |  |
| Over 10, up to 20                    | 2.3%  | 1.8%  | 3.6%  |  |
| Not reported                         | 8.9%  | 3.5%  | 2.6%  |  |
| <b>BMI - Men</b>                     |       |       |       |  |
| Underweight or Normal                | 40.9% | 39.4% | 41.0% |  |
| Overweight                           | 24.1% | 32.3% | 31.0% |  |
| Obese                                | 24.9% | 28.3% | 23.4% |  |
| Not Stated                           | 10.2% | 0.0%  | 4.5%  |  |
| <b>BMI - Women</b>                   |       |       |       |  |
| Underweight or Normal                | 41.9% | 39.4% | 36.6% |  |
| Overweight                           | 24.5% | 26.7% | 22.2% |  |
| Obese                                | 26.2% | 29.7% | 38.0% |  |
| Not Stated                           | 7.4%  | 4.2%  | 3.2%  |  |

## **Chapter 12 – Discussions and Conclusions**

### **12.1 – Key Findings**

This study was a first step towards identifying the factors that underpin vulnerability to food insecurity among social assistance recipients. The respondent's province of residence was significantly associated with their food security status while controlling for relevant socio-demographic factors, suggesting the effects of provincial policies. Relative to Ontario, two provinces – Nova Scotia and Saskatchewan – showed higher odds of moderate-severe food insecurity.

However, the nature of provincial policy variation is complex and does not fall into well-defined categories that would lead to clear hypotheses regarding differences (Curtis & Pennock, 2006). We broadly modelled two of the most important components of policy – asset limits and earnings exemptions, but found evidence that increased asset limits were protective of moderate-severe food insecurity only. In addition, our analysis of the drug coverage co-payment variable represents only a small component of the overall generosity of provincial social assistance programs.

Only a few of the sociodemographic factors found to predict food insecurity in the general Canadian population (Che & Chen, 2001; Vozoris & Tarasuk, 2003; McIntyre, 2003; Kirkpatrick and Tarasuk, 2008a; Tarasuk & Vogt, 2009; Tarasuk et al., 2013) were significant amongst social assistance recipients. The most consistently associated factor was the respondent's highest level of education. In addition, income level and gender were associated with moderate-severe food insecurity, though the latter variable became insignificant after controlling for health. In terms of severe food insecurity, the only additional significant association was found with home ownership.

Otherwise, significantly associated variables in the general population such as having declared Aboriginal status, being permanently unable to work, and receiving income from employment were not significant in this population.

Compared to research in the general population (Che & Chen, 2001; Adams et al., 2003; Vozoris & Tarasuk, 2003; Kushel, 2006; Kirkpatrick and Tarasuk, 2008a), we found similar relationships between food insecurity and several measures of health and well-being, including self-perceived general and mental health, mental health consultations, pain and function, and fruit and vegetable consumption. These findings suggest that food insecurity is as good a marker of compromised health and well-being among social assistance recipients as it is in the general Canadian population.

In addition to policy and social factors, vulnerability to food insecurity may be increased through underlying personal characteristics and social factors that predispose individuals to increased risk of poor health and food management (Kiely, 2013). The observed effects of home ownership may be tied to the housing instability experienced by renters, while the association observed for education may be linked to mental health.

The health of the respondent, as measured by chronic illnesses, seemed to increase vulnerability to food insecurity. This is reflected in the fact that ill health or disability has been associated with difficulty accessing food stores (Gorton, 2009). In particular, respondents with hypertension and mental health illnesses had greater odds for food insecurity. The high prevalence of chronic conditions, in particular mental illnesses, among our sample was also consistent with those reported in the literature regarding the health of social assistance recipients.

Comparatively, the study by Tarasuk et al. (2013) of the general population found a significant association between food insecurity and 8 chronic conditions. Consistent with our findings, they reported a strong association between mental health and the likelihood of food insecurity and more severe food insecurity. However, our most consistent predictor – hypertension – was not significantly associated with food insecurity in the general population. This may be due to the fact that it was one of the most commonly reported conditions among this sample, while other conditions identified by Tarasuk et al. (2013) had too low of a prevalence. Conversely, it appears that the social assistance system is protective towards some conditions, such as diabetes, that showed an association with food insecurity in the general population. Some of the discrepancy between our findings and those of Tarasuk

et al (2013) may relate to the fact that they did not restrict their analysis to single-person households, but were instead predicting household food insecurity from the survey respondent's health.

## **12.2 – Study Limitations**

### 12.2.1 – Cross-Sectional Data

We were limited by our cross-sectional data, which by its nature eliminates the possibility for causal inference of the relationships between food insecurity and provincial policy/sociodemographic variables/health. We used logistic regression to study the association between these variables, but a longitudinal data set documenting respondents before, during, and after receiving social assistance would be required to infer the direction of these relationships.

### 12.2.2 – Income versus Disability Assistance

Though we used the respondent's province of residence as a proxy for provincial policies, we were unable to differentiate which assistance program the respondent was actually receiving. We included a crude control in the form of income, as disability assistance provide more generous rates. In modelling other aspects of provincial policies, such as asset limits and earnings exemptions, we applied the less generous income assistance policies towards all respondents.

However, by referring to provincial social assistance reports, the best indication of a protective effect due to receiving disability assistance was seen via Saskatchewan. This province had the lowest proportion of disability assistance recipients, and was consistently at highest risk of moderate-severe food insecurity. Disability assistance may have a protective effect even after controlling for the higher income due to the increased stability and security of benefits, since it is intended as a long-term support compared to the shorter durations of income assistance. The positive effects of a stable support program on food insecurity can be observed among Canadian seniors, who are guaranteed an annual income through the creation of an income floor. An analysis of the 2009-2010 CCHS (Emery, Fleisch, &

McIntyre, 2013) found that among single person households with incomes under \$20,000 per year, the rate of food insecurity among seniors was half of the rate among adults aged 60 – 64 (14% vs 27%).

#### 12.2.3 – Other Conditions Not Measured

As noted previously, 7.2% of the respondents who reported being permanently unable to work also reported zero chronic conditions. This indicated that there may be other conditions underlying the inability to work for these respondents that were not accounted for in this analysis, but may be causing functional impairment. Chiefly among these may be HIV/AIDS, which has been linked to food insecurity, but is not measured on the CCHS (Normén et al. 2005). In focusing on physician-diagnosed chronic conditions, we also did not take into account other measures of health that were available on the CCHS, such as markers of oral health.

#### 12.2.4 – Duration of Social Assistance, Food Insecurity, and Chronic Disease

Due to the way in which questions were posed on the CCHS, we were unable to determine the length of time a respondent had been receiving social assistance, experiencing food insecurity/being food secure, or since they had received their chronic disease diagnosis.

It was assumed that all respondents in our sample had been receiving social assistance for at least 6 of the previous 12 months in order to consider this their main source of income. However, we were unable to determine the actual length of time for which a respondent had been receiving social assistance, and whether it had been received continuously or sporadically.

This is important given that with respect to all measures considered in this study, long-term welfare recipients experienced high levels of difficulty. In a study of 284 long-term welfare recipients (36 or more cumulative months on assistance) in Utah between 1997 and 1998, Taylor & Barusch (2004) found that compared with the total state welfare population, long-term recipients were more likely to present mental and physical health problems. While it is possible that this relationship is bi-directional, it is more likely that the presence of mental

and physical health problems extended tenures on social assistance. For example, more than a third of long-term recipients reported a disability that prevented them from obtaining or keeping employment (Taylor & Barusch, 2004).

Lastly, there is evidence to indicate that length of time since diagnosis is related to the severity of the condition. Using diabetes as an example of a progressively debilitating disease, an analysis of the CCHS Cycle 3.1 by Gucciardi et al. (2009) found that the likelihood of experiencing household food insecurity increased by 4% for each year earlier diabetes is diagnosed. The specific age at diagnosis may also be significant, as overall, diabetes diagnosis at 40 years or earlier resulted in a greater likelihood of living in a food-insecure household than those with a later diagnosis (Gucciardi et al., 2009).

#### 12.2.5 – Other Factors affecting Employment amongst Social Assistance Recipients

A limitation of this study on variables associated with food insecurity amongst the social assistance population is the inability to account for other factors that represent barriers to employment: domestic violence, substance abuse, and addiction (Wahl, 2010). Of particular concern are long-term social assistance recipients, who are more likely to have experienced severe domestic violence and to report drug or alcohol problems (Taylor, 2004). Though our sample consists of single adults only, it does not preclude the possibility that respondents had experienced previous domestic violence via a family member or former partner. We were also unable to control for factors affecting employability, such as marketable skills, employment record, availability of employment in the respondent's field and geographic area, and the overall unemployment rate. Access to transportation may also be an important issue, as recipients may be limited in their employment due to prohibitive costs or lack of public transportation.

In addition, this study did not take into account the overall opportunities for employment in each province, which would be represented by provincial unemployment rates. However, as the availability of work would also differ by region or municipality within a region, the overall provincial rate may be too broad of a measure. In addition, our analysis of socio-demographic factors found that respondents who had declared employment income in the

past 12 months did not have significantly lower odds of food insecurity (Table 7.1), suggesting that having employment was not protective.

#### 12.2.6 – Respondents in Rental Housing

For respondents who did not own their place of residence, it was assumed that they were living in rented dwellings. However, we have no data on respondents' shelter costs and were unable to differentiate between those living in market-priced accommodations versus those living in rent-geared-to-income housing. This is important as it would affect the amount of shelter allowance received, and may also affect the adequacy of this allowance towards covering housing costs.

In addition, the sampling strategy used by the CCHS, which relies on registered addresses, may overlook social assistance recipients who are residing in transient rental housing, and who would be more vulnerable to food insecurity than those with more stable accommodation. Thus the overall prevalence of food insecurity in social assistance recipients may have been underestimated.

#### 12.2.7 – Municipal Differences

In some instances, policy variation may be present at the municipal level. This is most commonly observed for discretionary provincial benefits, such as dental care in Ontario, which is only provided to adults in cases of emergency or to support employability or participation requirements. Municipalities share the cost of Ontario Works dental care programs with the province, and have established structures through which recipients are able to access dental care (Quiñonez et al., 2005). The municipality also determines the services eligible for coverage. Some cities have also designated special dental clinics to serve Ontario Works recipients. Similar municipal variation is also present in other provinces that provide dental care on a discretionary basis.

The benefit rates used in this study were appropriate to the largest municipalities in each province. However, many provinces pro-rate their support based on the type of population region to reflect the higher costs of living in urban areas. In addition, special supports for

residents in particularly remote locations, including the Coastal Labrador Living Allowance, the Manitoba Northern Allowance, and the Saskatchewan Northern Food Allowance were not accounted for.

#### 12.2.8 – Generalizability

Our study was limited to single adult respondents, which enabled us to model a clear association between health and food insecurity, as we could be certain that both the health and food security status reported were those of the respondent. This eliminated possible confounders due to the health or food security experience of other household members. However, this also means that these findings may not be generalizable to other household types on social assistance, as the effects of second incomes, resource pooling, and dependents were not examined.

The social assistance policies described here are applicable to 2011-2012, but as social assistance policies are constantly in flux, the results presented may not be generalizable to other years. In addition, the findings regarding socio-demographic and health factors may be not be generalizable to Prince Edward Island, Nunavut, Yukon, or the Northwest Territories.

### **12.3 – Future Directions**

#### 12.3.1 – Effect of Child and Family Benefits

As our analysis was restricted to single adult households only, we cannot extrapolate our findings to household including children, as they are subject to specific provincial policies. A subsequent analysis would model provincial policies concerning children, taking into account their age and relationship to the primary social assistance recipient.

#### 12.3.2 – Changes within Provinces over Time

In our analysis of food security as a function of provincial policy, it was assumed that all of the variables not included in our models were the same between provinces. However, this is clearly an over-simplification of the situation, as an innumerable amount of unaccounted factors may be influencing the association between province of residence and food

insecurity. Thus future studies focusing on only one province over several cycles of the CCHS may be more appropriate. For example, the poverty-reduction strategies adopted in New Brunswick in 2009 that increased income assistance rates by 50% presents a natural experiment through which to measure the impact of social assistance policy (Caledon Institute, 2013).

#### 12.3.3 - Alternative Modelling of Provincial Policies

An alternative method of comparing provincial policies would be to use a monetary variable, such as by comparing the expenditure per recipient according to province. However, this would make it difficult to explore specific aspects of social assistance policy, or to examine how the budget is allocated between resources.

#### 12.3.4 – Respondents receiving any amount of Social Assistance

Our sample was restricted to respondents who claimed social assistance as their main source of income. This excluded individuals who received some of their income via social assistance benefits, but not enough to qualify it as their main source. These respondents were likely reliant on social assistance for shorter durations than those who claimed it as their main source of income. Further analyses may be warranted amongst these respondents to explore the relationship between food insecurity and receiving any amount of social assistance, and whether it differs when compared to those claiming it as their main source of income.

#### 12.3.5 – Age-adjusted Analyses

Increased age appeared to be protective against food insecurity: though older adults had poorer health via more diagnoses, once the number of conditions was controlled for, they were at lower risk. Using an age-adjusted model may be a viable further analysis, as it may speak to the reasons why individuals became reliant on social assistance.

#### 12.3.6 – Variability of Living Circumstances

Our sample included all respondents who would have been considered as single adults according to social assistance policy, which included unattached individuals living alone,

unattached individuals living with others who were not family, or single parents with children over the age of majority. Additional analyses may find it useful to make a distinction between living situations, as they may have affect food security status. Sharing a dwelling may either be protective against food insecurity, as it would likely reduce the cost of accommodation, or it may increase the odds of food insecurity through increased instability in the home, such as possible domestic violence.

#### **12.4 – Implications and Conclusions**

The variation in food insecurity between provinces indicates that provincial governments, via the policies they set, impact food insecurity. Through Saskatchewan's increased odds of food insecurity, we can hypothesize that disability assistance has a mitigating effect in all other provinces, especially for the mentally ill. In addition, we observed slight signals for the effects of specific provincial policies, and their importance on the effects of health.

Our findings support Heflin and Siefert's (2007) proposed mechanisms to explain variation in household food security among vulnerable households. Firstly, households have varying amounts of financial resources. In our study, these were artificially controlled by provincial policies regarding asset limits. However, it appeared that a high threshold for liquid assets was protective against severe food insecurity. This suggests that increasing these limits may be a viable way to circumvent the financial constrains mechanism of food insecurity.

Secondly, Heflin and Siefert (2007) proposed that individuals may face constrains on coping abilities, meaning that some may be better than others at managing scarce resources. Chief of these constraint are chronic illnesses, and mental illness in particular. The authors reason that individuals with poor mental health may be unable to budget resources rationally (Heflin & Siefert, 2007). Our analysis of provincial drug coverage for recipients did not show any significant associations, indicating that access to pharmacotherapy and other treatments may not only be a result of financial barriers, but also due to mitigating factors like diagnosis, access to transportation, and health literacy. Thus increasing the quality of and access to mental health care overall may improve coping abilities and reduce vulnerability to food insecurity.

Lastly, Heflin and Siefert (2007) expect a variation in food security status due to the presence of many competing demands on household resources. For recipients requiring special diets, the increased food costs leave less resources for other demands, and so trade-offs must be made when not all demands are possible. Our analysis suggests that a higher level of Special Diet Allowance may be protective against moderate-severe food insecurity. Similar condition-specific policies may be beneficial for decreasing the pressures of competing demands.

While income assistance policies are focused on welfare-to-work initiatives, they must also take into account the high prevalence of chronic disease among their recipients. This may be done via shorter hours, more flexible schedules, and increased levels of job retention after illness (Morris, 2005). This is especially important for long-term social recipients who struggle with health, who have severely limited ability to find employment (Wahl, 2010).

There is data to indicate that prevailing attitude at the core of Canadian social assistance policies as stated by Breitkreutz et al. (2012) (“a nudge in the right direction, along with support and training, welfare recipients will be able to find employment and leave welfare, thereby achieving self-sufficiency”) may be a flawed premise. Longitudinal studies of welfare recipients, both current and prior, indicate that even those social assistance recipients who managed to find work, are likely to remain in poverty, now as part of the “working poor” (Taylor & Barusch, 2004). In their longitudinal analysis of 17 lone parents beginning the transition from welfare to work in Alberta, Breitkreutz et al. (2012) found that the “promise” of a chance to leave a life of poverty through work was largely unrealized. The notion that “any job was a good job” did not notably increase income or lead to economic independence.

Edin & Lein’s (1997) research regarding single mothers in Chicago reinforces the idea that in some cases, the working poor are equally or even more likely to report hunger than social assistance recipients. This may be due to the increased supports given to social assistance recipients in the US, including food stamps and health insurance. Certain provinces have

recognized the loss of these benefits as a barrier to financial security, and have extended them to former social assistance recipients newly transitioned into the workforce. For example, New Brunswick's Extended Health Card prolongs health and dental coverage for the first 12 months of employment, when there is no alternate coverage available. This benefit may be renewed on a yearly basis, up to a maximum of three years after joining the work force.

It must be reinforced that the provincial policies summarized in the Appendix are carried out under the judgement of individuals, and are thus subject to the interpretation of caseworkers regarding financial assistance, and medical professionals regarding health and functioning. In Lightman, Herd, & Mitchell's (2008) interviews with 90 social assistance recipients in Toronto, a respondent reported being denied disability assistance several times despite "suffering from a range of debilitating conditions, including depression, hepatitis C, liver cirrhosis, multiple concussion syndrome, degenerative discs, diabetes, and extensive arthritis." Thus while respondents in provinces such as Nova Scotia and Saskatchewan may appear to be more vulnerable to food insecurity, it may speak more to the actual eligibility criteria in use in each province.

Overall, these findings suggest that the needs of social assistance households are not being adequately met through current benefit structures in order to maintain food security. This seems to be the case especially when recipients are of poor health, particularly mental health. The observed relationship between socio-demographic variables, chronic disease status and risk of food insecurity raises serious questions about the adequacy of current social assistance benefit structures. However, the variation in likelihood of food insecurity between provinces and for specific conditions may highlight opportunities for policy intervention to provide more effective supports for this highly vulnerable population subgroup. Chronic and severe food insecurity can only exacerbate social assistance recipients' existing conditions and further jeopardize their health, highlighting the importance of provincial policy decisions to reduce food insecurity among this group.

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## **APPENDIX - Social Assistance Policies by Province**

This section provides a summary of each province's social assistance policy manuals (Table A1). Policies that affect only special groups are included, but discretionary policies granted on a case-by-case basis are not. Using Saskatchewan as an example, the Northern Food Allowance is discussed, as it is granted to all recipients living in a particular region, but the Special Care Allowance is not, as it is approved on an individual basis by each recipient's case worker. In addition, policies affecting children and spouses of recipients are not discussed, as our population of interest remains single adult households.

Each section will address one province in detail, starting with policies regarding benefit rate, assets, wages and self-employment, and health benefits that apply to all social assistance recipients in the province. Any special assistance policies unique to the province are also included. Following this, specific policies regarding only the Income or Disability Assistance recipients in each province will be described.

**Table A1. Social Assistance Programs by Province**

| <b>Section</b> | <b>Province</b>      | <b>Income Assistance Program</b>         | <b>Disability Assistance Program</b>            |
|----------------|----------------------|--|---|
| <b>I</b>       | Newfoundland         | Income Support Program                   | Disability Support Program                      |
| <b>II</b>      | Prince Edward Island | Social Assistance Program                | Disability Supports                             |
| <b>III</b>     | Nova Scotia          | Employment Support and Income Assistance | Services for Persons with Disabilities          |
| <b>IV</b>      | New Brunswick        | Transitional Assistance                  | Extended Benefits                               |
| <b>V</b>       | Quebec               | Social Assistance Program                | Social Solidarity Program                       |
| <b>VI</b>      | Ontario              | Ontario Works                            | Ontario Disability Support Program              |
| <b>VII</b>     | Manitoba             | Employment and Income Assistance         | Income Assistance for Persons with Disabilities |

|             |                  |  |  |
|-------------|------------------|--|--|
| <b>VIII</b> | Saskatchewan     | Saskatchewan Assistance Program/ Transitional Assistance Program | Saskatchewan Assured Income for Disability Program (since June 2012) |
| <b>IX</b>   | Alberta          | Alberta Works Policy Manual                                      | Assured Income for the Severely Handicapped                          |
| <b>X</b>    | British Columbia | Temporary Assistance   | Disability Assistance  |

## I. – Newfoundland

Social assistance in Newfoundland is delivered by the Ministry of Advanced Skills and Education. The information in this section was obtained from the Ministry's Income and Employment Support Policy Manual (2013). Though applicants are not required to have resided in Newfoundland for a specific length of time, recipients of assistance cannot be absent from the province for more than 60 days unless approved by a case worker.

The yearly assistance rate is a sum of the Basic Income Support and Shelter Allowances. Provincial tax credits such as the HST rebate and the Home Heating Rebate Program (\$250 per household per year) have also been incorporated into the calculations by the Caledon Institute. The increase in the Basic Income Support rate that occurred in April 2012 is reflected in the yearly benefit rate (Table 3.1), which is an average over 2012.

### Assets

Fixed assets include all vehicles, land or residences, and are not considered in terms of eligibility. However, if these assets are sold, profits will be considered income. Other exempt assets include the RESP, funds from a severance package, and the RDSP. The limit on liquid assets is \$3000, which applies to any asset that can be converted to cash.

### Income

Exempt income includes lump sum payments, RESPs, funds from RDSPs up to \$20,000, federal compensation payments, tax credits, income tax refunds, and government funded disability related supports. Newfoundland considers some income sources non-exempt, meaning that they are deducted dollar for dollar from the monthly benefit rate. These include

federal training allowances, Canada Pension Plan payments, Old Age Security benefits, Veterans' Allowance, compensation under the Workplace Health, Safety and Compensation Act, employment insurance benefits, and pensions to the applicant or recipient or to his or her dependent child or dependent student from other sources, inheritance, and insurance claims. Lastly, partially exempt income includes wages, self-employment, and scholarships and bursaries. To obtain net income, allowable deductions include transportation, equipment, and union dues. In addition, self-employed recipients may be able to claim expenses like advertising, utility costs, and equipment.

## **Special Allowances**

### *1. Coastal Labrador Cost of Living Allowance:*

Recipients residing in a coastal Labrador community are entitled to an allowance of \$150 monthly.

### *2. Supplemental Shelter Benefit:*

This benefit is given to recipients whose shelter costs exceed the Basic Shelter rate allotted for their household size. While it is technically a discretionary benefit, more than 90% of St. John's residents automatically receive this \$150 allowance due to the higher cost of rent in Newfoundland's largest urban centre.

## **Employment Benefits**

### *1. Job Start Benefit*

In order to assist with the transition from assistance to employment, recipients will receive an allowance of \$125 once every 12 months.

## **Health Benefits**

### *1. Dental Plan:*

Recipients are covered for basic services; do not need to contribute co-payment

### *2. Medical Equipment and Supplies*

### *3. Special Diet:*

- a. Diabetic Food Allowance - \$60 per month*

- b. Other foods, low sodium diet – up to \$60 / month
- 4. *Prescription Drug Plan:*

Recipients have access to the NFL Drug Formulary, and do not need to contribute co-payment

#### Income Support Program

For a single adult receiving this assistance, \$75 plus 20% of their net income is exempt from consideration.

#### Disability Support

A single adult with a disability is entitled to a net earnings exemption of \$150 plus 20%. This recipient also receives the Personal Care Allowance provided by Health and Community Services (\$150 per month). However, recipients of this allowance are not allowed to also receive the Supplemental Shelter Benefit.

## **II. – Prince Edward Island**

The social assistance rate in Prince Edward Island is obtained by combining the shelter, food, clothing, household and personal supplies allowances, which are set by the Department of Community Services and Seniors. Information regarding income assistance was obtained from the Social Assistance Policy Manual (2007), and disability assistance information was found in the Disability Support Program Policy Manual (2010).

### **Assets**

Liquid assets include cash, trust company, credit union or co-operative funds, the realizable value of stocks, bonds, debentures, investment certificates, registered retirement savings plans, registered retirement income funds, mutual funds, the cash surrender value of life insurance policies, savings receipts, mortgages, bequests and settlements, retirement allowances, severance pay, bonuses, pensions and other similar payments. Recipients of income assistance are allowed to possess \$200 in liquid assets before their eligibility is impacted. Recipients with a disability are allowed to have \$900 dollars in liquid assets.

## **Income**

Several sources of income are exempt from the financial needs assessment: awards for pain or suffering, tax benefits, insurance settlements, RESPs, RDSPs, and divorce or alimony payments. In addition, irregularly received income is exempt up to \$50 a month. Regarding employment income, the first \$75 plus 10% of the remainder is exempt for both types of assistance.

## **Health Benefits**

### *1. Prescription Drug Benefits:*

Patients do not have to contribute a co-payment for any of the drugs listed on the Prince Edward Island Drug Formulary.

### *2. Special Diets:*

An allowance may be provided for “therapeutic diets” for conditions diagnosed by a physician that require specific nutritional considerations.

## Income Assistance

No special benefits are allotted for these recipients.

## Disability Support Program

This program consists of two components: the Adult Disability Supports, which provide disability support to help individuals achieve greater independence; and the Employment and Vocational Supports, which provide training and employment services to help recipients find competitive, long-term employment. In order to be eligible, recipients must have medical certification of a disability that substantially limits the ability to carry out activities of daily living and present a barrier to employment. This condition must be likely to continue for at least one year.

The amount of financial assistance provided is based on a functional assessment of the client. This allowance is intended only for disability – related costs in order to help recipients live as independently as possible. Therefore recipients with very low functioning ability are granted

the highest allowance, and vice versa. Before embarking on the program, the recipient and case worker must develop a support plan to identify issues and goals, outline an action plan, establish a time frame and set dates for completion.

### **III. – Nova Scotia**

Nova Scotia Community Services provides information via the Employment Support and Income Assistance Policy Manual (2014) and the Services for Persons with Disabilities Policy Manual (2012). Recipients of social assistance in Nova Scotia must complete an “employment plan” to establish their goals, participation in employment services and/or an approved educational program, markers on their path to employment. The benefit rate calculated is a result of the personal and shelter allowances. In July 2012, personal allowances increased from \$229 to \$238 per month per adult. Provincial tax credits include the Nova Scotia Poverty Reduction Credit (paid to singles only) and the Affordable Living Tax Credit. These are reflected in the Caledon Institute calculations.

#### **Assets**

Assets excluded from consideration are the principal residence, one motor vehicle, a cash surrender value of under \$500 of a life insurance policy, tools or equipment directly related to a trade or profession, an RESP, and money from a savings program designed to promote self-sufficiency.

#### **Income**

Exempt sources of income include tax credits, income tax refunds, honorariums, government settlements for pain or suffering, and bursaries, scholarships and stipends, RDSPs. Conversely, all sources of unearned income will be charged at 100% against benefits. Unearned income includes investments, maintenance payments (Canada Pension Plan, Employment Insurance), and wills and inheritance. Net earned income is obtained by deducting income tax, union dues, clothing and equipment costs, and income tax from the gross income. For tips, gratuities, and commissions, net income is considered to be 70% of gross income.

#### **Health Benefits**

*1. Pharmacare:*

Income assistance recipients are required to pay a flat co-pay fee of \$5 per prescription. Exemptions are granted for Disability Assistance recipients, or those with multiple monthly prescriptions (discretionary by case-worker).

*2. Special Diet:*

Provided up to a maximum of \$150/month, for multiple conditions

- a) Diabetes – Amount depends on patient's caloric requirement
- b) Low Sodium (Cardiovascular disease) - \$27 / month

*3. Medical Supplies and Equipment: Up to \$200/month*

**Employment Support and Income Assistance**

For single recipients of this program, non-exempt liquid assets are subject to a \$1000 limit. If they are employed, the first \$150 of net earnings plus 30% of the balance is exempt from consideration.

**Employment Supports**

*1. Approved Personal Development Supports:*

Costs of these activities may be covered for recipients may be covered if necessary for their employment plan, up to a maximum of \$300 per activity for a twelve month period.

*2. Association/Professional/Licensing Dues:*

When necessary for employment, these fees may be covered up to \$500 per year.

*3. Payment of Professional Fees:*

An allowance of up to \$200 per year for fees necessary for employment, including driver's licenses, criminal record checks, and fines.

**Services for Persons with Disabilities**

Recipients are eligible for disability assistance if they lack the ability to be self-supporting in the long term due to needs related to their disability. They are also eligible for a wage incentive, as the first \$300 plus 30% of their net wages are exempt from consideration. In addition, money received from training and employment preparation programs are exempt as

part of the Monthly Training Allowance at \$300. Disability recipients also have a higher liquid asset limit, at \$3000. Recipients may be granted an excess shelter allowance of up to \$200/month if they require housing with barrier free access due to their condition. Recipients are also covered for non-prescription medications for \$200/month.

#### **IV. – New Brunswick**

The information in this section on both the income and assistance programs were obtained from the Social Assistance Policy Manual (n.d.) published by the New Brunswick Department of Social Development. In calculating the yearly benefit rate, the Caledon Institute included the Home Energy Assistance Program tax credit (\$100 per household per year). However, the Monthly Fuel Supplement (\$150/month) – available from November to April to help offset high heating costs – was not included, as eligibility is determined on a case-by-case basis.

#### **Assets**

Liquid assets include cash, insurance value, or investments that can be accessed. Assets exempt from this consideration include the household residence, one motor vehicle used for work or transportation, RDSPs, scholarships and bursaries, and property or tools used for livelihood, such as farming or fishing equipment. If the assets for self-employment are unable to generate income after 3 months time, then the recipient must attempt to sell the items at fair market value.

#### **Income**

Income received from tips or gratuities are considered Special Wages. These recipients, including waiters or bartenders, will be subject to a percentage deduction off their gross wages based on their profession. Above these limits, the monthly assistance amount will be scaled back dollar for dollar.

#### **Self-Employment**

Self-employed individuals are considered as a type of Special Wages, who are subject to a time restriction of 6 months on assistance. If assistance is still required past this time, the value of the business and its assets must be re-considered as part of the respondent's financial resources. Income from self-employment is calculated as gross revenue minus business expenses (to a maximum of 50%) to obtain the net value. For recipients who become self-employed while on assistance, they are granted total earnings exemptions for the first 3 months. These recipients are also encouraged to partake in the New Brunswick Entrepreneur Program and the Self-Employment Assistance program.

## **Health Benefits**

### *1. Drug Coverage*

Prescription drugs in New Brunswick are subject to a \$4 co-payment per prescription, up to a maximum of \$250 per household each year.

### *2. Special Diets*

Special Diet allowances are provided for certain conditions (HIV, Hepatitis C) and for patients actively receiving treatment (chemotherapy, organ transplants, palliative care). An allowance is only provided for diabetics who are 19 and under and insulin dependent.

### *3. Diabetic Supplies*

This benefit is provided for diabetic recipients to provide them with the necessary tools to manage their condition. The supplies could include test strips, lancets, syringes (only for insulin dependent), and swabs.

### *4. Extended Health Card*

This benefit is designed to reduce the barrier to employment for recipients re-entering the workforce by extending health and dental coverage for the first 12 months of employment, when there is no alternate coverage available. This health card is intended to assist individuals in the transition from social assistance to being part of the work force. This benefit may be renewed on a yearly basis, up to a maximum of three years after joining the work force.

### Transitional Assistance

This assistance is provided for single persons who are able to work, or who have a temporary medical problem. Wage exemption under this program is \$150 of the net cost, plus 30% of the remainder. Recipients are entitled to \$1000 worth of exempt liquid assets in determining financial eligibility.

### Extended Benefits

Recipients of this benefit must have been certified by the Medical Advisory board as having a disability that limits their capability for employment. They enjoy a higher wage exemption at \$250 of net earnings plus the remaining 30%. In October 2012, the Disability Supplement was increased from \$87.50 to \$91.67 per month. Recipients with a disability are also eligible for a higher asset limit at \$3000.

## **V. – Ontario**

The governance of social assistance in Ontario follows the directives of the 1997 Ontario Works Act, and is implemented by the Ministry of Community and Social Services.

Information on policies was found in the Ontario Works Policy Directives (2013) and the Ontario Disability Support Program – Income Support Directives (2013). Income assistance is calculated monthly based on the basic requirements of the household, depending on household size, shelter costs, food, heating, and income. The assistance paid is broken down into several components: the base rate, shelter rate, and Food and Lodging Allowance.

Ontario provincial tax credits include the Ontario Sales Tax Credit (last payments made in February and May 2012), the Ontario Energy and Property Tax Credit (last issued in March and June 2012) and the Trillium Benefit (issued from July to December 2012). The Ontario Disability Support Program rate was increased in November 2012, and the Ontario Works rate in December 2012. Both of these increases have been accounted for in the benefit calculations by the Caledon Institute.

## **Assets**

Social assistance recipients may own a home, as long as it serves as their principal residence (must live there all 12 months in a year), as well as a motor vehicle. Both of these assets are exempt from consideration, no matter their market value. Several other assets are to be exempt from the needs consideration, including: an additional vehicle worth up to \$15,000 if it is used for business purposes, compensation for injury or death up to \$25,000, business assets up to \$10,000 for self-employed recipients, and tools used for self-employment over the last 12 months to generate income. Financial savings plans like the Registered Disability Savings Plan, locked-in Registered Retirement Savings Plans, pensions, and the Registered Education savings plan are also exempt. Lastly, payments received under exempted government or private settlement agreements, life insurance policies (up to \$100,000), and trust funds are also exempt.

## **Income Exemptions**

Some sources of income were exempt from consideration entirely, including federal and provincial child benefits, awards for pain and suffering, income from loans or grants, income from interest or dividends (up to \$30 per year), RDSPs, RESPs, gifts and voluntary payments (up to \$6000 per year), training allowance received through the Ontario Skills Development Benefit (OSD) program to be used for approved training courses and materials, and income from sales used to purchase a principal residence or other exempt asset.

## **Health Benefits**

### *1. Prescription Drug Coverage*

- Recipients must contribute a \$2 co-payment per prescription dispensed

### *2. Special Diet Allowance*

- Provided to cover the costs of a special diet due to an approved medical condition, wherein the diet is considered adjuvant to the treatment of the condition and results in additional costs. For recipients with both conditions, only the higher allowance will be provided.
  - Diabetes (\$81 / month)
  - Hypertension (\$86 / month)

### *3. Diabetic Supplies and Dressings*

- Costs are covered when ordered under physician's prescription
- Includes insulin pump, blood glucose monitors, lancets, syringes, test strips,

### Ontario Works

Recipients must be residents of Ontario, and must reside in the geographic area where he/she applies for or is receiving assistance. If a recipient is away from Ontario for more than 7 days, assistance will be reduced or cancelled unless the absence was previously approved by a caseworker. For recipients of Ontario Works in 2011 and 2012 who received wages or were self-employed, 50% of their net earnings were exempt from consideration.

The non-exempt asset limit for a single person on Ontario Works was increased in December 2012. The new limit is \$606 for a single person, up from \$599. Ontario Works does not distinguish between applicants or recipients in this regard.

### **Employment Assistance Programs**

As the financial assistance program for individuals facing temporary barriers to employment, the Ontario Works program is designed to help individuals find sustainable employment and re-gain self-reliance. Thus, all Ontario Works agents must provide employment assistance as well as basic financial assistance.

In return, clients must participate in approved employment assistance activities, make reasonable efforts to pursue other financial resources, and seek and obtain sustainable employment. This interaction is spelled out in a Participation Agreement (PA), which is mandatory plan to identify the approved employment assistance activities the client will participate in. The PA is a collaborative document between client and caseworker, and seeks to highlight the client's skills, experience, and circumstances. The PA might also identify restrictions to participation or temporary deferrals to employment assistance activities, which may be due to health, learning disorder, professional, or religious reasons. Depending on the type of restriction, documentation must be provided from the appropriate source.

The PA is reviewed every three months, or whenever his or her circumstances have changed (e.g. completed an employment assistance activity). Applicants who do not comply with the terms stated in the PA will have their financial assistance suspended for one month for the first non-compliance, and for three months on subsequent occurrences.

Recipients may be eligible to participate in self-employment activities as a fulfillment of their PA, but must complete a four-step Ontario Works self-employment process to assess their suitability for the Self-Employment program. Based on the outcome of the assessment, the participant may pursue self-employment exclusively, not at all, or in combination with other employment assistance activities to fulfill participation requirements.

### Ontario Disability Support Program

In order to qualify for ODSP, a person must be diagnosed with a disability, defined as a: “substantial physical or mental impairment that is continuous or recurrent and expected to last one year or more, and the direct and cumulative effect of this impairment results in a substantial restrictions in one or more of the activities of daily living.” This disability must have been verified and documented by a health care professional. Recipients must be residents of Ontario, and may not be absent for more than 30 days, barring special approval for medical or educational reasons.

For recipients of ODSP in 2011 and 2012 who received wages or were self-employed, the first \$200 in net earning plus 50% of the remainder were exempt from financial consideration. The non-exempt asset limit for a single person is \$5000, above which the client would be ineligible for income assistance. The ODSP also does not distinguish between applicants or recipients in this regard.

### **Employment Support**

Recipients of ODSP are not precluded from employment, though they are allowed to participate on a voluntary basis. They are, however, encouraged to increase their economic independence and are provided support to hire and retain employees with disabilities.

#### *1. Full-Time Employment benefit*

- a. Provided to help with the costs of beginning full-time employment (30 hours/week)
  - b. Maximum of \$500 over 12 months, paid in a single or multiple installments
  - c. Recipients are eligible for this benefit if they have been on social assistance for at least three consecutive months
2. *Other Employment Benefit*
- a. Covers costs associated with beginning or changing an employment assistance activity: new training program with different duties and responsibilities, or shifting from job training to work experience; or beginning or changing employment
  - b. The maximum amount per eligible recipient of this benefit is up to \$253 in a 12-month period.
  - c. Expenses include suitable work wear, licensing fees, tools and equipment, and transportation

### **Transferring from Ontario Works**

If an applicant to Ontario Works indicates that they are experiencing a disability, staff may choose to direct refer them to ODSP. As such, all applicants and participants should be informed of the ODSP and their right to apply.

ODSP asset limits may be applied for applicants applying to Ontario Works who have indicated their wish to apply for the ODSP. The ODSP asset limit exemption can only be applied once in a person's lifetime, and is in effect until a decision is made regarding ODSP. If the applicant is found ineligible for the ODSP, the agreement is voided.

### **VI. – Quebec**

Social assistance in Quebec is governed by the 2006 Individual and Family Assistance Act under the jurisdiction of the Ministry of Employment and Social Solidarity. The benefit rate includes food, housing, housekeeping, personal care, clothing, and transport. Rates increased in January 2012 for both the Social Assistance Program and the Social Solidarity Program,

and this change is reflected in the given rates (Caledon Institute, 2013). Provincial tax credits also included in the calculations include the Solidarity Tax Credit, which was implemented in July 2011. Note: Quebec Policy Manuals (*Manuel d'interprétation normative des programmes d'aide financière*, 2004) were only available in French, and were translated by the researcher into English.

### **Assets**

In addition to dividing assets into fixed or liquid for financial eligibility, Quebec also categorizes fixed assets into those that are wholly or partially excluded. Completely excluded assets include tools and equipment required for self-employment, household items and furniture, pension credits, a work vehicle worth up to \$10,000, and compensation from legal or government actions. Partially excluded assets include the primary residence, a motor vehicle not used for employment, and liquid assets. The limits differ by type of program, but once the limit is exceeded, benefits are reduced by 2%. For example, if a recipient has \$1000 more in assets than they are allowed, their benefits would be reduced by \$20.

In regards to liquid assets, some items are completely excluded from consideration: government and legal settlements, amounts paid under the Work Premium, the Tax Benefit Working Income, and the RDSP. Other types of liquid assets such as donations are subject to a limit before benefits are affected, which again differs by type of assistance.

### **Income Exemptions**

Some sources of income are not included in the financial needs consideration, such as interest, tax credits, and property tax. Parental contributions or occasional small gifts up to \$100 are also excluded. Income from the RDSP is exempt up to 300/month, even though the RDSP itself remains an exempt liquid asset. The net income of self-employed recipients is calculated by deducting the operating expenses from the gross profit.

### **Health Benefits**

#### *1. Special Diet Allowance:*

Diabetes: An allowance of \$20/month is provided to recipients with diabetes.

*2. Pharmacare:*

Recipients are eligible for medications in the Quebec Drug Formulary, and receive medications free of charge.

*3. Dental Care:*

Covers basic dental procedures, but recipients are only eligible after 12 months on social assistance.

### Social Assistance Program

Recipients of this program are allowed to have \$90,000 worth of partially excluded assets, which includes their primary residence and motor vehicle. Upon applying to the program, the applications must have liquid assets worth less than \$887. Once approved for social assistance, this threshold is increased to \$1500 in liquid assets. Earnings income exemptions are \$200/month, and this applies to salaries, tips, commissions, and other benefits.

### **Special Benefits**

*1. Allowance for Temporary Constraints:*

An allowance of \$130 per month for recipients who are: aged 58 and over, unable to complete employment or employment preparation due to ill health, or are victims of violence.

### Social Solidarity Program

This program is available to individuals who face severe barriers to employment due to poor physical or mental health. Applicants must provide medical certification of a condition causing functional limitations that is likely to last 12 months or more. These conditions must have resulted in limited capacity to support themselves through employment, and left their financial resources inadequate to cover their basic needs. In addition to their medication documentation, applications must be assessed regarding their employability factors: age, training and education, work experience and skills, and dynamic adaptation abilities (behavioural disorders, learning ability, interpersonal relations).

Eligible recipients must be residents of Quebec, though they are granted more leeway regarding temporary absences from the province due to health or treatment purposes. Both applicants and recipients of social assistance must have no more than \$2500 in liquid assets. For recipients who are able to obtain employment, the first \$200 of their wages is exempt from consideration.

## **VII. – Manitoba**

The basic assistance rate in Manitoba is a total of the basic and shelter allowances. Since April 2011 the Manitoba Shelter Benefit provides a flat rate amount of \$60 per month to single persons with a disability and childless adults on income assistance. This benefit has been included in the Caledon Institute calculations. Policy information in this section was obtained from the Employment and Income Assistance Administrative Manual (n.d.).

### **Liquid Assets**

Manitoba does not differentiate between recipients of income or disability support in regards to a limit on liquid assets. All applicants and recipients are allowed to have a maximum of \$4000 in liquid assets to be eligible for assistance. Included liquid assets are life insurance plans, RRSPs, pensions, and funeral plans. Exempt liquid assets include gifts worth up to \$100 and federal compensation payments.

### **Income Exemption**

Manitoba distinguishes between earned and unearned sources of income. Unearned income is defined as all income except for wages and net revenue from self-employment that is available for current use. Some of these sources are exempt from consideration, including tax credits, settlements for pain or suffering, and provincial tax benefits. With regards to earned income, the first \$200 of net monthly earnings are exempt from the financial needs consideration, plus 30% of the balance. These rates are equal for both assistance programs. For recipients who are self-employed, their net income is obtained as a percentage of the gross income, depending on the amount, as well as subtracting the costs of the business. Allowable business expenses include equipment, utilities, training, and transportation costs.

## **Health Benefits**

### *1. Pharmacare:*

All social assistance recipients are eligible for Manitoba Pharmacare program to obtain prescription medications. However, they are not required to contribute a deductible towards the cost.

### *2. Medical Supplies and Equipment:*

Medical equipment is supplied via the Home Care Program, and includes home support, respite care, and supplies.

### *3. Therapeutic (Special Diets):*

- a) Diabetes: is prorated by the recipient's estimated daily energy requirements. Monthly payment amounts range from \$27 - \$170, depending on whether the patient requires 1000 to 3000 calories each day. Based on a standard 2000 calorie/day diet, this amounted to \$81.63 per month.
- b) Low Sodium: The amount for recipients prescribed a low sodium diet is \$32.80 per month, regardless of the recipient's overall energy needs.

### *4. Transportation and Travelling Meal Allowances:*

Residents in rural areas may apply for an allowance to cover the costs of their transportation when going to seek health care away from their home communities. In addition, a traveling meal allowance is granted when the patient requires a special diet.

## **Special Allowances**

### *1. Northern Manitoba*

In recognition of the increased cost to basic necessities in Northern Manitoba, the Manitoba Northern Allowance is provided to individuals residing independently north of the 53d parallel of latitude. In addition, the Northern Energy Cost Benefit raises the monthly basic benefit for these households by \$25 to deal with increased costs of utilities

in the north. Residents of this area are also provided free medical transportation to obtain care.

### Employment and Income Assistance

All recipients who are considered employable are required to complete an Employment History and Personal Job Plan to manage their efforts to find work. This document includes information about the recipient's skills, job history, expectations, and when achieved, confirmation of their acceptance of employment. In order to help with the transition into employment, recipients may qualify for an allowance for work clothing and transportation, as long as they are working more than half-time. Participants who are leaving the program after have been employed for 6 months are also granted an allowance to help with expenses related to starting work. This is to assist with work-related special needs such as clothing or tools, and may be granted multiple times.

### Income Assistance for Persons with Disabilities (IAPD)

This category of recipients receives the Income Assistance for Persons with Disabilities benefit of \$105 per month. To be eligible, recipients must fit the definition of disability: a physical or mental health or incapacity that is likely to continue for more than 90 days, during which time this individual will be unable to earn income to meet their basic necessities. Their financial resources available to the applicant must also be less than the cost of basic necessities. Additional extra assistance includes an allowance for telephone, coin laundry, and wheelchair transportation. Recipients will also be eligible for the Registered Disability Savings Plan, which is regarded as exempt income.

Unlike most provinces, Manitoba provides an employment assistance program specifically targeted at IAPD recipients to help them enhance their independence and rejoin the work force. Known as the *marketAbilities* Program, it assists recipients through counseling, vocational assessment and planning, job placement and training. A Training Fund for financial support in attaining employment is also available.

## **VIII. – Saskatchewan**

The social assistance rate in Saskatchewan is a sum of the General Living Allowance and Utility Allowance like in other provinces, but they are guided under some unique policies. The General Living Allowance is dependent on the size of the recipient's community, reflecting the higher costs of living in urban compared to rural areas. For the Caledon Institute, the rates paid in Tier A, which contains the largest communities including Regina and Saskatoon, were used in the calculations. While other provinces set a maximum limit on utility allowances, Saskatchewan pays the actual costs for electricity, heating/energy, and water. In order to calculate Utility Allowances, province-wide average utility costs in 2012 were used.

Social assistance in Saskatchewan consists of three programs: the Transitional Employment Assistance for short-term assistance of fully employable individuals (Transitional Employment Allowance Program Policy Manual, 2014); the Saskatchewan Assistance Plan for fully, partially, or unemployable recipients (Saskatchewan Assistance Program Policy Manual, 2014); and the Saskatchewan Income Assistance for Disability Program for persons facing severe disabilities (Saskatchewan Assured Income for Disability Policy Manual, 2014). The Caledon Institute used the Transitional Employment Assistance for the single employable rates and the Saskatchewan Assistance Plan rates the single employable person with a disability.

### **Assets**

Exempt assets include real assets (place of residence, one vehicle), personal assets, the Saskatchewan Pension Plan up to \$25,000, the RDSP, and inheritance income up to \$100,000. All other assets must not exceed \$1500 in value, for both the Transitional Employment Program and the Saskatchewan Assistance Program.

### **Income**

Some sources of income are exempt from consideration, including payments of compensation, scholarships, bursaries, awards, RDSPs, equipment or tools for employment,

and small gifts under \$200. However, unlike in other provinces, income such as interest above \$100 from bonds, savings, or certificates; life insurance settlements and personal injury settlements over \$10,000 are not exempt. Other considered income includes earned income, pensions, maintenance payments, or annuities. Net income is obtained by deducting expenses on a monthly basis.

### **Self-Employment**

Some items and expenses needed to run the business can be claimed, such as accounting, legal, taxes, licenses, and utilities. Recipients with income over \$125 per month must apply for the Saskatchewan Employment Supplement.

### **Special Allowances**

#### *1. Northern Food Allowance*

This monthly \$50 allowance is provided for recipients living north of the 54<sup>th</sup> parallel.

#### *2. Job Start Allowance:*

Recipients beginning a new position are granted \$140 to help meet the expenses of starting employment.

### **Supplementary Health Services**

#### *1. Dental Coverage:*

Emergency services only for the first 6 months on assistance; basic services are covered thereafter.

#### *2. Medical Supplies or Appliances*

#### *3. Prescription Drugs:*

Recipient must contribute a \$2 co-payment per prescription dispensed

#### *4. Special Food Allowance*

- Diabetes: Allowance is based on the caloric needs of the respondent

### Transitional Employment Allowance (TEA)

The TEA support program is intended for individuals who are facing short-term barriers to employment, and are broadly divided into two types of recipients. Category A recipients are able to participate in employment searching or training programs. Though they may have barriers to health, recipients must have demonstrated the capability to obtain and keep at least a regular part-time position. Category B clients are expected to become self-sufficient within three month of their first support allowance. This may include individuals awaiting their first pay from employment, Employment Insurance Payment, Worker's Compensation, or inheritance. Benefits are terminated after three months of assistance.

### Saskatchewan Assistance Plan

This program addresses the needs of two types of respondents: those who are fully employable, and those who are partially employable or unemployable. Fully employable recipients are able to work at least 36 hours per week, or be enrolled in a full-time training program. Of their net income, \$50 plus 25% of the remainder is exempt from consideration, up to a maximum of \$200/month.

Partially employable individuals may be limited to part-time or seasonal work due to poor work history, behavioural problems, low educational attainment, a lack of employable skills, and being aged 55 or over. Unemployable persons may face any of the same barriers as the partially employed, as well as experiencing a disability due to physical or mental illness. A disability-related condition is expected to last no less than one year, and to severely limit activities of daily living and the capability for employment or training. Until June 2012, it was the only program for disabled individuals living independently to obtain financial assistance. For these recipients, \$200 plus 25% of their net income is exempt, up to a total of \$325 per month. For individuals with a disability participating in self-employment, all of their income is exempt.

### **Special Allowances**

#### *1. Disability Allowance*

\$50/month is provided to recipients with a disability.

### Saskatchewan Assured Income for Disability

The Saskatchewan Assured Income for Disability (SAID) program was introduced in 2009. In the beginning, it was intended as financial support for individuals with disabilities living in institutional care. In June 2012, SAID was expanded to include persons with disabilities living independently. Applicants are deemed eligible under the SAID disability impact assessment process for the health, but must also show a budget shortfall inconsistent with their basic needs. This is the most generous program available in Saskatchewan – benefits are an average \$275 a month higher than those paid under to recipients with disabilities under the Saskatchewan Assistance Plan. The 2013 Caledon Institute figures will include calculations for this program.

Recipients who receive wages or salaries are eligible of a net income exemption of \$200 plus the next 25% to a maximum of \$325 per month. Self-employed recipients receive an exemption on their entire net income as long as they have low income and a minimal financial investment in the enterprise.

### **Special Benefits**

#### *1. Disability Income Benefit*

This \$70/month benefit is for all independently living individuals to help maintain their costs of living.

## **IX. – Alberta**

Information was obtained via the Alberta Works Policy Manual (2011) and the Alberta Ministry of Human Services Assured Income for the Severely Handicapped Policy Manual (2014). Monthly core benefits under Alberta Works were increased in April 2012, and this change is reflected in the Caledon Institute calculations.

## Alberta Works

Alberta Works recipients are divided into two classes based on their ability to sustain full-time employment.

### *1. Expected to Work (ETW):*

These recipients are currently employed or employable as a full-time worker in the competitive labour market. For those not employed full time, they are required to complete a Service Plan and participate in training services to increase their employability. Recipients may also be eligible if they are temporarily unavailable for no more than 6 months due to ill health, and receive an Earnings Replacement Allowance of \$86/month during this time.

### *2. Barriers to Full Employment (BFE):*

These recipients may never be able to work full-time continuously in the competitive labour force. Though they may be employed, they are not required to sustain a full-time position or seek further employment. Recipients may be qualified for this class due to a mental or physical health problem, a low level of education, a poor or inconsistent work history, or advanced age (60 and over). Additional benefits include a \$78 per month Personal Needs Allowance.

## **Service Plan**

This document outlines the recipient's plans towards attaining full time employment and financial independence. It includes the goals, programs and services, and specific activities to be undertaken and must be mutually agreed upon by client and case worker.

## **Assets**

Exempt fixed assets include the primary residence, personal belongings, business tools for self-employment, and any number of vehicles worth up to \$10,000 in total. Gifts are not considered an income, but an increase in assets. Small gifts amounting to less than \$900 annually are exempt. Non-exempt liquid asset levels increased in April 2012 to: \$627 for a single person, \$1,618 for a single person with a disability.

## **Income**

Fully exempt income includes payments received from the government for pain or suffering, money received as compensation for loss or damage to property, RDSP payments, tax credits, awards up to \$3500, and grants for small business or education. Regarding employment income, the first \$230 of net income, plus 25% of the remainder is exempt. For those receiving wages, net employment income is derived by deducting income tax, union dues, and meal or expenses from gross income.

## **Self-Employment**

ETW recipients who choose self-employment to fulfill their Service Plan have 3 months to make their business viable, after which the terms of the Plan will be reconsidered. Farmers, however, are allowed one year to make their business profitable. BFE clients do not have a time limit in which to make a net income on their business. Net income from self-employment is obtained by deducting expenses, business taxes, license fees, and facility costs.

## **Health Benefits**

1. *Medical and Surgical Supplies*
2. *Prescription Medication*

Recipients do not have to contribute a co-payment each time they are dispensed a prescription.

3. *Special Diets*
  - a) Diabetes: \$40 per month allowance
  - b) Low Sodium: \$20/month allowance, only given if the recipient is not already receiving the diabetes allowance.

## **Special Allowances**

1. *Isolated Community Allowance*

Recipients who reside in a community without all-weather road access are eligible for this additional benefit of \$40/month.

### Assured Income for the Severely Handicapped (AISH) Program

Besides Saskatchewan, Alberta is one of two provinces to feature a separate program for persons with severe and permanent disabilities. Applicants must have a permanent disability that impairs their ability to obtain employment. Appropriate documentation from a specialist physician must confirm that there is no treatment that could improve the individual's functioning enough for them to obtain employment. If the applicant is experiencing multiple conditions, their collective effects are considered. AISH applicants must be living independently in the community. However, recipients who temporarily admitted to an institution for up to three months are still able to receive benefits during that time.

AISH recipients are provided with a flat-rate living allowance benefit which is not contingent on family size. In April 2012, this living allowance was increased from \$1,188 to \$1,588 per month. In addition, the AISH offers Personal Benefits to recipients who have less than \$3000 in non-exempt assets.

### **Assets**

The following assets are considered fully exempt from consideration: a principal residence, a vehicle adapted to the disability of the recipients, RDSP, personal items, and a Locked in Retirement Account. If any of these exempt items are sold, the money from the sale is granted a temporary 90-day exemption if it is used to purchase another exempt asset. All other assets are exempt up to \$100,000.

### **Income**

Income from scholarships, awards, bursaries, honorariums, RDSP and RRSP withdrawals are exempt from consideration. In addition, government settlements, grants to start a business or to continue education are exempt. In regards to employment income, the first \$800 in net earnings is fully exempt, as well as 50% up to a maximum of \$1,150. For recipients who are self-employed, their net income is obtained by deducting union and professional dues, business expenses, and Canada Pension Plan contributions from their gross income.

Income may also be classified as Passive Business Income, which includes capital gains, investments, royalties, interest, and trust fund incomes. The first \$200 of this income is fully exempt, as well as 25% of the remainder.

## **X. – British Columbia**

British Columbia tax credits include the BC HST Credit and the Low Income Climate Action Tax Credit. Recipients are not to be away from British Columbia for more than 30 days, unless it is to obtain treatment. The British Columbia Ministry of Social Development and Social Innovation published information via the Online Resource Policy Manual (2014).

### **Assets**

Exempt fixed assets include the primary place of residence, a motor vehicle worth up to \$10,000, tax credits and refunds, tools and equipment for self-employment, government grants and settlements, and income tax benefits. The value of all other assets is included in the needs assessment. British Columbia had a separate, lower asset limit for applicants (\$150), but this was eliminated on October 1, 2012. At the same time, asset limits for both Income and Disability recipients were increased.

### **Income**

Sources of income exempt from consideration include tax credits, government settlements, the BC earned income benefit, RESPs, RDSP withdrawals, loans for small businesses, fuel rebates, and rent subsidies. Other sources of income are considered either earned or unearned. Earned income refers to money from wages or self-employment. Unearned income includes money from stocks or shares, interest earnings, veterans' pensions, disability pensions, inheritances, tax refunds, insurance payments, and education or training allowances, grants, loans, bursaries or scholarships. Deductions from unearned income include income tax, criminal injury compensation, and disability-related costs. Deductions from gross income include income tax, union dues, CPP payments, employment insurance, and clothing or equipment in order to obtain the net income for financial consideration.

## **Self-Employment**

Recipients who choose self-employment are required to submit a business plan outlining as well as monthly reports covering earnings, expenses and assets. If these are deemed unsatisfactory, the recipient may be required to participate in a self-employment program. Small business operators are allowed to claim permitted operating expenses, including supplies and products, accounting and legal services, fees and licenses, business insurance, and advertising. In addition, recipients are allowed to have \$50,000 in assets to operate their business.

## **Health Benefits**

### *1. Diet Supplement*

- a) Strict Sodium Diet - \$10/month
- b) Diabetes - \$35/month

### *2. Pharmacare:*

No co-payment is required from the recipient.

### *3. Medical Equipment and Devices*

## **Persistent Multiple Barriers to Employment**

If a recipient has a condition that was certified by a physician to present a barrier to searching for or holding down employment, they may be eligible to be designated as having Persistent Multiple Barriers. This condition must have last for at least one year and is likely to continue for at least 2 more years.

## **Special Allowances**

### 1. Christmas Supplement: Annual \$25 allowance

## Temporary Assistance

For all other assets, the total value must not exceed \$2000 for a single adult recipient.

## Disability Assistance

Applicants must have a severe physical or mental impairment that restricts them from obtaining employment and completing their activities of daily living, which include: preparing meals, self care and hygiene,

Applicants to the disability designation are eligible to have their assets exempt for up to 3 months if they are to be deposited into a Registered Disability Savings Plan. Income from unearned sources is likewise exempt if it is to be used for disability-related costs. Disability-related costs include those applied towards devices, medical aids, and caregiver services. All other liquid assets are exempt up to a total cash value of \$5,000.