An Examination of Community-based Meal Programs for Homeless and Under-housed People in Five Canadian Cities

by

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A thesis submitted in conformity with the requirements for the degree of Master of Science
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Abstract
The provision of free or low cost meals is an integral component of community services working to address problems of poverty and homelessness in Canada. However, there has been little systematic examination of how they function relative to clients’ nutrition needs. The objective of this research was to investigate the scope and nature of meal programs by examining an inventory of charitable food provisioning activities, created between 2010 and 2011, in five Canadian cities. Of 290 agencies offering meal programs, 548000 meals were served every month. However, service scheduling varied throughout the week, and the majority of agencies were reliant on volunteer labour, donated food supplies, and experienced difficulties managing the current demand for food assistance. Findings from this study highlight the strengths and limitations of the current food provisioning system and a need to improve the capacity of agencies to respond to populations experiencing food insecurity in Canada.
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Chapter 1 - Introduction

Over the past two decades, homelessness and hunger have been serious issues in many urban centers across Canada (Frankish et al., 2005; Gaetz et al, 2006; Laird, 2007; Canadian Community Health Survey, 2004; Statistics Canada, 2008). In order to respond to some of these problems, local community initiatives have established food provisioning efforts to sustain these populations. The proliferation of meal programs for these groups gives the impression that these organizations are able to saturate the entire food insecure population. However, there has been little investigation of the capacity of community-based charitable meal programs to help people experiencing food insecurity to meet their basic needs. Surveys confirmed that some homeless youths make use of community meal programs, yet program utilization does not appear to be protecting participants from nutritional vulnerability (Tarasuk et al., 2005). Within communities, food-provisioning programs are often ad hoc initiatives, reliant on donations and volunteer labour (Dachner & Tarasuk, 2009), with minimal coordination between programs (Tarasuk et al., 2005). The limited, fragmented, voluntary nature of this ‘system’ defines the food insecure population’s access to food assistance and shapes the adequacy of food that these programs provide. Although a few isolated studies have documented the nature of food insecurity among homeless and under-housed in Toronto (Gaetz et al., 2006; Tarasuk et al., 2005; Antoniades & Tarasuk, 1998), there is a need to critically examine the adequacy, accessibility, and effectiveness of these organizations across Canada to determine their capacity to respond to populations experiencing food insecurity.

To understand the scope of meal programs throughout Canada, our research group undertook a study to investigate the food provisioning efforts of community food programs.
within five Canadian cities (Victoria, Edmonton, Toronto, Quebec City, and Halifax).

Ultimately, the purpose of this thesis was to identify the scope and operational nature of community meal programs, and evaluate the effectiveness of each community system’s ability to respond to problems of unmet food need amongst individuals experiencing food insecurity.
Chapter 2 - Literature Review

2.1 Food Insecurity in Canada
2.1.1 Household Food Insecurity

Considering that food insecurity has been a legitimate public concern across Canada for several years, population health surveys have attempted to measure the prevalence of food insecurity throughout the country (Canadian Community Health Survey, 2004; Health Canada, 2008; Health Canada, 2010). In 2004, the Canadian Community Health Survey summarized the number of people experiencing varying degrees of household food insecurity. Food security was defined as a time “when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life” (Canadian Community Health Survey, 2004). In contrast, food insecurity can be defined as the limited or uncertain ability to acquire foods in socially acceptable ways (Anderson, 1990). Although these two definitions suggest food insecurity is limited to a dichotomous relationship, recent reports indicate that individuals experience food insecurity along a continuum. For example, ‘moderate’ food insecurity indicates the quality or quantity of food was compromised whereas ‘severe’ food insecurity implies an individual has been forced to reduce food intake or disrupt their normal eating patterns (Statistics Canada, 2008). For the purposes of monitoring this problem, the Household Food Security Survey Module is routinely administered on the Canadian Community Health Survey (Health Canada, 2008). The 18 question survey sought to determine adult (10 questions) and child (8 questions) food insecurity in households across Canada. Zero to one affirmative response for either the adult and child sections suggested the household was food secure. However, for the adult survey, between two and five affirmative responses indicated moderate food insecurity and six or more affirmatives suggested the adult was experiencing severe food insecurity. Whereas, two to four affirmatives
for the child survey indicated moderate food insecurity and five affirmative responses or more suggested the child was experiencing severe food insecurity. The Canadian Community Health Survey results indicate that a startlingly high percentage of Canadians living in a household were currently experiencing some form of food insecurity. The report suggested that between 2007 and 2008, approximately 961,000 (7.7%) households or 2.1 million Canadians had experienced food insecurity within the previous calendar year (Health Canada, 2008). Moreover, 2008 results indicate that problems associated with food insecurity are more prevalent within urban centers (8.1%) compared to rural areas (6.1%) (Health Canada, 2008). It is also interesting to note that Saskatchewan reported the lowest proportion of individuals experiencing food insecurity (6.3%) whereas P.E.I was the province reporting the greatest proportion of individuals affected by food insecurity (10.6%). However, these comparisons were drawn between provinces, whereas the northern territories had substantially greater proportions of their populations experiencing food insecurity. For example, in Nunavut, approximately one third of the population had been affected by food insecurity in the previous year (Health Canada, 2008). In addition, the review reported that individuals receiving social assistance, employment insurance, of aboriginal descent, and unattached individuals living by themselves were more likely to be experiencing food insecurity (Health Canada, 2008; Canadian Community Health Survey, 2004).

Recently, nutrition research has suggested that individuals experiencing food insecurity are more likely to have reduced consumption of fruits, vegetables, and milk products, which can increase the risk of various nutrient inadequacies (Kirkpatrick & Tarasuk, 2008). Reduced nutrient intakes likely play a detrimental role in the management of chronic diseases associated with this demographic including: diabetes and cardiovascular disease (Kirkpatrick & Tarasuk, 2008). However, although CCHS surveys have reported a staggering proportion of low-income
housed populations experiencing food insecurity, the studies fail to recognize homeless and under-housed individuals who experience similar problems (Dachner & Tarasuk, 2002).

2.1.2 Homelessness and Food Insecurity

Throughout the 1990’s, homelessness became a prominent social problem across Canada resulting from fewer affordable housing initiatives, problematic social assistance programs, and shifting employment opportunities (Canadian Institute for Health Information, 2007). One recent Canadian definition of homelessness describes individuals or families “without stable, permanent, appropriate housing, or the immediate prospect, means and ability of acquiring it,” (Canadian Homelessness Research Network, 2012). This statement describes a continuum of individuals who are 1) Unsheltered, or individuals who live on the streets or in areas not meant for human habitation; 2) Emergency sheltered, including individuals residing in temporary overnight shelters throughout a community; 3) Provisionally sheltered, which refers to individuals residing in a place that is considered temporary or not meant for long-term occupancy such as transitional housing accommodations; or 4) At risk of homelessness, which refers to individuals who are not currently homeless but whose financial and unstable accommodation may lead to a state of homelessness (Canadian Homelessness Research Network, 2012).

Research conducted in the United States and Canada has also considered the temporal fluidity of homelessness and created a typology to classify these populations (Aubry et al., 2013; Kuhn & Culhane, 1998). First, Aubry et al., (2013) and Kuhn & Culhane (1998) identified transitionally homeless populations describing individuals who were a part of the shelter system for only a few days or an extremely short period of time. In the Canadian study, the group accounted for 88-94% of the total homeless population and typically consisted of younger
individuals who were least likely to be associated with mental health or substance abuse problems compared to other categories of homeless individuals (Aubry et al., 2013). Secondly, *episodically homeless* individuals experienced recurring bouts of homelessness. This group comprised 3-11% of the total homeless population, and although these individuals also tended to be young, they were more likely to experience medical, substance abuse, and mental health problems. Finally, *chronically homeless* populations experienced enduring long-term bouts of homelessness or reported being homeless for longer than 2 years. This population also accounted for 2-4% of the total homeless population, and experienced substance abuse and mental health problems, but tended to be older than *transitionally and episodically homeless* individuals. Furthermore, although the *chronically homeless* population consisted of a small proportion of the total homeless population, they reported the greatest reliance on overnight shelter support compared to other groups (Aubry et al., 2013). In conclusion, Aubry et al., 2013 and Kuhn & Culhane (1998) suggest that local initiatives addressing homelessness and poverty should apply this typology, by advocating for preventative services and resettlement assistance for transitionally homeless individuals, transitional housing support for episodically homeless populations, and supported housing and long-term support programs for those classified as chronically homeless.

Despite the visible and obvious problems of homelessness, no enumeration has been able to accurately represent the magnitude of the current problem (Human Resources and Skills Development Canada, 2008). Nationwide governmental and non-governmental studies have estimated that the homeless population in Canada ranges anywhere between 150 000 to 300 000 individuals (Homelessness, 2006; National Homelessness Initiative, 2006; National Housing Research Committee, 2011). In addition, this large population encompasses an extremely
heterogeneous group of individuals including adult males and females, youths, immigrants, aboriginals and other marginalized populations. These estimates draw upon data from the Homeless Individuals and Families Information System (HIFIS) and represent individuals who were considered emergency sheltered because the statistics only reported the total number of people who had accessed emergency overnight shelters. From these results, it is difficult to deduce the total number of unsheltered individuals, provisionally sheltered individuals and the populations who were at risk of homelessness because the study only reported a subset of the total population who could be categorized as homeless.

Although there has been minimal research documenting the total extent of homelessness across Canada, local cities have periodically conducted homeless counts to determine the severity of homelessness within their community. For example, head counts in Halifax, Toronto, Edmonton, and Victoria have reported the total number of people who had accessed emergency shelters or were considered emergency sheltered, whereas Edmonton, and Toronto also accounted for the number of unsheltered individuals who were residing on the streets by conducting nighttime counts (Street Needs Assessment, 2009) and reporting the total number of individuals accessing bottle depots and drop-in centers who did not have permanent housing (Edmonton, 2012). Interestingly, Edmonton also attempted to enumerate the number of provisionally sheltered individuals residing in their city by conducting head counts within temporary housing facilities (Edmonton, 2012). From these results, it was evident that few cities considered provisionally sheltered individuals and/or populations who were at risk of homelessness, which suggested that many of these head counts were inevitably underestimating the total extent of the problem within each community (Refer to Appendix). In addition, cities rarely tabulate annual counts and the methodological differences between homeless counts often
make it difficult to compare the entire population from year-to-year and between cities. Moreover, in some communities where consistent homeless counts have been conducted, there have been no marked decreases in the total homeless population (Street Needs Assessment, 2006; Street Needs Assessment, 2009; Hungry and Homeless in Greater Victoria, 2010/2011; Victoria, 2007; Halifax Report Card, 2009; Halifax Report Card, 2010). Thus, a city’s inability to reduce the total number of homeless individuals residing within a community raises important questions about the effectiveness of local initiatives and programs targeting these populations.

With that being said, some cities have developed targeted goal-oriented strategies to effectively reduce poverty issues within their community. For example, Edmonton has been conducting fairly consistent homeless counts since 1999 to monitor the population within their community (Homeward Trust, 2012). In fact, the city of Edmonton introduced a progressive and comprehensive plan in 2009 to reduce and eradicate homelessness within ten years. The plan integrated five main goals to end homelessness which included: 1) Providing permanent housing for all homeless individuals; 2) Increasing the number of housing accommodations that were available to impoverished populations; 3) Developing emergency accommodations and implementing a plan to transition populations to secure housing locations; 4) Preventing individuals from becoming homeless; and 5) Improving the capacity, collaboration, and effectiveness of supports and initiatives targeting homeless populations (Homeward Trust, 2012).

Recently, this progressive approach to address homelessness issues has resulted in positive results. More specifically, since the program’s inception, 2300 homeless individuals have been permanently housed and provided with the necessary supports to enable them to remain housed. It is also interesting to note that the most recent enumeration in 2012 counted 2174 homeless individuals who 1) were considered *unsheltered* because they had no overnight accommodations
on the day of the head count or 2) were considered emergency sheltered because they had accessed an emergency shelter accommodation the previous night, and was a substantial reduction from the 2008 homeless count which captured 3079 homeless individuals (Homeward Trust, 2012). These initial results suggest that Edmonton’s progressive approach to permanently house homeless individuals and provide them with necessary supports has resulted in significant reductions in the overall homeless population living within their community.

Despite local community efforts to address issues concerning homeless populations, several studies have found that a large proportion of homeless individuals are nutritionally vulnerable (Bunston & Breton, 1990; Dachner & Tarasuk, 2002; Hwang & Bugeja, 2004; Langnase & Muller, 2001; McCarty & Hagan, 1992; Rauschenbach et al., 1990). For example, one study by Persaud, McIntyre, & Milaney, 2010 suggested homeless adult men in Calgary experienced food insecurity resulting from meals that were both nutritionally and calorically inadequate. These findings have been corroborated by several other studies examining nutritional inadequacies in a variety of homeless and low-income populations including: adults (Baggett et al., 2011; Gelberg et al., 1995; Langnase & Muller, 2001; Lyles et al., 2013; Wicks et al., 2006), women (Baptiste et al., 2009; Bunston & Breton, 1990; Davis et al., 2008; Johnson & McCool, 2003), drug-users (Baptiste et al., 2009; Himmelgreen et al., 1998; Romero-Daza et al., 1999; Strike et al., 2012), and youths (Hamelin et al., 2007; Li et al., 2009; Persaud et al., 2010; Roy et al., 1999; Smart & Adlaf, 1991; Wang et al., 1991; Whitbeck et al., 2006). The inability to obtain consistent meals and the inadequate nature of these meals compounds existing health problems and leaves homeless individuals in an increasingly vulnerable state (Baggett et al., 2011; Gaetz et al., 2006; Hwang & Bugeja, 2004; Miewald et al., 2010; Tarasuk et al., 2009). In addition, diseases that require dietary management such as diabetes (Hwang & Bugeja, 2004),
HIV/AIDS (Miewald et al., 2010) and a range of cardiovascular diseases (Truesdell & Sani, 2001) would be extremely difficult to manage while consuming nutritionally inadequate meals.

Homeless populations have traditionally searched for ways to obtain consistent meals. Some food acquisition strategies that homeless individuals have adopted include: accessing meals from food assistance programs, purchasing food from stores, finding leftover food in waste containers or accepting food from passersby. Other strategies often involve quasi-legal and illegal food acquisition plans such as: panhandling, stealing food products, or prostituting for food (Dachner & Tarasuk, 2002; Anema et al, 2011). More specifically, male homeless youths were more likely to work independently, earn more money to obtain food, and seek the assistance of friends and acquaintances during times of chronic food deprivation whereas female youths were more likely to collectively work in a group, and either borrow money or trade sex for food (Tarasuk et al., 2009; Wingert et al, 2005; Khandor & Mason, 2007; Gaetz, 2004). However, these strategies can be dangerous or unlawful ways of obtaining nutritious meals, and likely reflect the desperate nature of this population to secure food in any way possible (Dachner & Tarasuk, 2002; Tarasuk et al., 2009). Although most of this research has focused on meal acquisition strategies for homeless youths, findings from these studies have also elicited several social responses that have attempted to ameliorate problems associated with all populations experiencing food insecurity.

2.2 Responses to Food Insecurity

2.2.1 Food Banks

In Canada, one response to food insecurity has been a proliferation of community-based food banks. Food banks were established in the mid 1980’s as an extra-governmental temporary remedy to address hunger problems in low-income households across the country. However,
consistent increases in food insecurity over the last three decades have resulted in the establishment of provincial and national food bank governing bodies (Food Banks, 2012; Tarasuk, 2005). From the perspective of service delivery, Food Banks Canada organizes large-scale fundraising campaigns and solicits food supplies from various distributors, which then filter down to provincial and ultimately local community initiatives that are charged with the responsibility of distributing food supplies to low-income populations. In many cases, local food banks may also receive resources from a variety of redistribution organizations to augment their total food supply (Daily Bread Food Bank, 2012; North York Harvest, 2012; Second Harvest, 2011). Although independent food banks continue to operate throughout the country, approximately 450 food banks are now affiliated with Food Banks Canada (Food Banks Canada, 2012). Interestingly, the first Canadian Association of Food Banks HungerCount study suggested 378,000 individuals had reported using a food bank every month during that year (Davidson, 1989). However, according to 2012 reports, approximately 900,000 individuals had accessed a food bank every month in the past year (Food Banks Canada, 2012). Over the past four years, the number of Canadians accessing food banks during any given month has increased from 673,000 individuals in 2008 to approximately 900,000 Canadians in 2012 which suggests that the demand and need for these services has been steadily increasing over the past decade.

2.2.2 Community-based Meal Programs

Although food bank services were established to accommodate low-income populations experiencing food insecurity, homeless problems across Canada necessitated the need for community meal programs providing immediate food relief (Federation of Canadian Municipalities, 1999; Tarasuk & Dachner, 2009; Gaetz et al., 2006). Although these programs were introduced as a temporary support to provide food to food insecure populations and
homeless individuals experiencing acute needs, the incessant demand for meals has resulted in the establishment of long-term programs providing meals to populations experiencing food insecurity.

2.2.2.1 Organization of Meal Programs

The structure and layout of organizations operating community-meal programs differs drastically between services. Programs appear to fall into two broad categories: 1) *Agencies providing temporary services to low-income populations that offered basic ‘emergency’ assistance* and 2) *Agencies focusing on reducing problems associated with poverty and homelessness through the provision of multiple services and supports.*

Primarily, several Canadian and American studies have indicated faith-based meal programs originated in response to growing hunger problems within communities. It appears that the majority of these programs have been focused on offering short-term temporary hunger relief strategies (Dachner et al., 2009; Eisinger, 2002; Heslin et al., 2003; Burt et al., 1999). For example, according to one study documenting services addressing poverty in the United States, faith-based organizations were more likely to provide only basic services such as meals and clothing compared to secular programs, which often offered a variety of support services (Aron & Sharkey, 2002). These programs may have been introduced as a temporary remedy to address homelessness and poverty across the country, but the constant demand for nutritional support has required enduring short-term remedy solutions.

Moreover, there is evidence of faith-based organizations banding together to develop an integrated targeted model to serve homeless populations in several communities across Canada. For example, in response to a homeless Toronto man freezing to death during the winter (Out of the Cold, 2010), an Out of the Cold initiative started operating a coordinated system, where
several faith-based locations combined their efforts to alternate offering meals and overnight shelter during the winter months (Dixon Hall, 2012). The structure of the program ensures that program users have access to dinner, overnight accommodation, and breakfast one night every week. The services are offered by at least one location within the organization on a daily basis to respond to the critical needs for under-housed populations across the city. Moreover, Out of the Cold initiatives are not only operating in Toronto, but there is evidence of similar initiatives delivery overnight services for homeless populations in several communities across Canada including: Calgary (Inn from the Cold, 2013), Kingston (In from the Cold, 2013), and Halifax (Emergency Winter Shelter, 2013). These programs are also unique because they operate their program entirely from solicited monetary and food donations, and most programs only employ volunteers (Tarasuk & Dachner, 2009). The Out of the Cold organization offers temporary solutions to homeless populations but has rarely expanded services to offer more than food and overnight accommodation (Dixon Hall, 2012).

In response to rapidly increasing homeless populations in the late 1980’s and early 1990’s, there was a rapid increase in the number of multi-service organizations that addressed the underlying causes of homelessness and poverty by combining meal initiatives with other social services such as transitional housing support, income assistance, and healthcare to provide a continuum of care within one program (Aron & Sharkey, 2002; Burt et al., 1999; Edgar et al., 1999; Tarasuk & Dachner, 2009). These initiatives served to combine these long-term solutions that would help transition individuals off the streets (Edgar et al., 1999). Multi-service organizations appear to have originated from both the secular and faith-based sectors as a means to reduce homelessness within communities. More specifically, in Toronto, organizations such as the Salvation Army operate as faith-based social service agencies to help reduce homelessness
and poverty whereas Agincourt Community-services is a secular program offering similar supports (Homeless and Outreach Services, 2010; The Salvation Army, 2009). Unlike many faith-based meal programs which offer food to all low-income populations, the heterogeneous nature of multi-service programs is defined by services targeting particular populations such as youths, women, individuals affected by mental disorders, or homeless populations to accommodate specific needs (Aron & Sharkey, 2002; Dachner et al., 2009). Research has suggested that the multi-service approach may be the best strategy to address and reduce homelessness because of beneficial health outcomes associated with multi-service health clinics, reduced risk behaviours resulting from educational modules, and improving long-term housing status among homeless populations (Fitzpatrick-Lewis et al., 2011). Indeed, Milaney, 2012, indicates best practices within programs targeting homeless populations should incorporate multiple services to enhance case management strategies. However, although meal programs have been introduced alongside a variety of services responding to homelessness and poverty, many meal services have not modified their meal provisioning to respond to the complex needs of those experiencing a variety of health complications such as diabetes (Hwang & Bugeja, 2004) and HIV/AIDS (Miewald et al., 2010). Ultimately, these programs provide a continuum of care, which addresses immediate problems such as hunger and food insecurity while assisting with long term solutions which are necessary to help individuals transition out of homelessness.

Today, the landscape of community-meal services appears to incorporate a multitude of programs ranging from non-secular drop-in programs offering meals throughout the week, faith-based meal programs and overnight shelters, and multi-service agencies operating within the secular and faith-based sectors (Aron & Sharkey, 2002; Dachner et al., 2009; Burt et al., 2002). For example, one study from Toronto has recently noted that drop-in programs targeting
impoverished populations have been accommodating clientele experiencing hunger problems and have added meal initiatives as an adjunct program to improve retention with their primary service (Dachner et al., 2009). These meal programs were often peripheral services that complement but do not serve to accomplish the program’s main goals. More specifically, the study identified one health clinic that had offered snacks in their waiting room because they recognized that without feeding their clients, they would be unable to effectively manage their health needs (Dachner et al., 2009).

Although the emergence of meal programs has resulted in a heterogeneous response of services, studies have indicated most Canadian meal programs are heavily reliant on charitable food donations (Bocskei & Ostry, 2010; Tarasuk & Dachner, 2009). The majority of programs in Victoria and Toronto solicit supplies from major food redistribution agencies and independent food retailers to resource their enterprises (Bocskei & Ostry, 2010; Tarasuk & Dachner, 2009). Redistribution agencies play an integral role with the provisioning of food supply. These organizations are responsible for collecting ‘surplus’ resources from several companies, retail stores, and supermarkets. Collected resources are then filtered down to a network of community-based programs to distribute and serve low-income populations. However, major redistribution agencies often support hundreds of initiatives and must equally distribute collected food supplies amongst all programs. Thus, the food supplies received may be limited by the quality and quantity of charitable donations (Dachner & Tarasuk, 2002; Knowles, 2000; Tarasuk, Dachner, & Li, 2005).

2.2.2.2 Funding

In order to operate, manage and organize their services, agencies have attempted to secure funding from municipal, provincial and federal grant programs and donors. Funding is necessary
to augment meal supplies, hire employees, and/or support facility costs (Tarasuk & Dachner, 2009). Considering a substantial proportion of individuals accessing meal programs are homeless, many meal services and communities are able to secure funding from government social programs addressing homeless issues to improve existing infrastructure or introduce new initiatives.

For example, between 1999 and 2007, the federal government managed the National Homelessness Initiative (NHI). The main objectives for this program included: improving community capacity to respond to local homelessness issues, increasing investments in facilities directed towards homeless populations, and enhancing the general knowledge of homelessness in Canada (Evaluation of the National Homelessness Initiative, 2003). The program was renamed the Homelessness Partnering Strategy (HPS) in 2007, and it has guaranteed funding until 2014. The objectives of this program are supported through seven funding streams: Designated Communities, Rural and Remote Homelessness, Aboriginal Homelessness, Federal Horizontal Pilot Projects, Homelessness Knowledge Development, National Homelessness Information System, and a Surplus Federal Real Property for Homeless Initiative (Human Resources and Skills Development Canada, 2011). More specifically, the federal government organization expects specific communities to assess their homelessness problems, develop local plans including plans for community-meal programs, and secure tertiary funding for initiatives targeting homeless individuals. The HPS has identified 61 high-risk urban and aboriginal communities that require federal funding support. Rural communities with approximately 25,000 residents must apply for funding through a separate stream. Designated at-risk communities must demonstrate that they have developed long-term realistic plans that are attempting to eradicate homelessness, and specific local applicants must demonstrate that potential initiatives
would support the larger community’s goals in order to be eligible for funding. Approximately 1.3 billion dollars was allocated towards the NHI between 1999 and 2007; and more recently 1.9 billion dollars has been secured through 2008-2014 for housing and homelessness (Human Resources and Skills Development Canada, 2011). Additionally, all high-risk urban centers must match the funding support that they receive from NHI. However, once communities have secured funding support from the HPS, the decision about how to spend the allocated money occurs at the community level, and does not reflect any potential federal government vision to address homelessness.

Provincial governments have also supported a variety of communities across Canada. Contrary to the HPS which provides local communities with financial support and allows them to determine effective strategies for addressing homelessness, some provincial governments have adhered to a more prescriptive approach to address homelessness and poverty within the province (Homeward Trust Edmonton, 2008; Province of Ontario, 2011). For example, the Ministry of Community and Social Services and the Ministry of Affairs and Housing in the province of Ontario has created and self-funded a variety of homelessness and housing initiatives within several high-risk centers across Ontario in an effort to reduce poverty within the province (Province of Ontario, 2011). Thus, although there is a multi-tiered platform of funding support from all levels of government, the ad hoc nature of securing financial support for homelessness initiatives reflects the lack of an established coordinated funding strategy between the federal, provincial, and municipal governments.

While the federal, provincial, and municipal governments appear to be primarily focusing on removing homeless populations from the streets thus, there may be limited funding from these budgets to operate community-meal programs. Although the Quebec provincial government has
pledged money to support food-aid programs (Santé et Services Sociaux Québec, 2008), it is unclear whether other provinces have secured government funding to specifically support food provisioning programs. Consequently, from the perspective of staffing arrangements, programs are often heavily dependent on the volunteer workforce and may experience difficulties hiring paid coordinators to facilitate program operations (Dachner et al., 2009; Lundahl & Wicks, 2010).

2.2.2.3 Nature of Meal Program Operations

To date, there has been limited research characterizing the scope of meal programs in Canada, but one study in Toronto sought to describe the nature and organization of services serving homeless populations. Tarasuk & Dachner, (2009), indicated that in response to the growing homeless numbers during the 1990’s, organizations and agencies recognized populations were experiencing hunger and began serving meals. The study documented 490 programs serving upwards of 128,000 meals every week and suggested programs continued to experience difficulties managing the demand for their services. Many organizations independently introduced programs irrespective of other services that had been operating within the community. Since the initial expansion of services, the study indicated that there had been minimal integration between programs to provide daily support, resulting in the fragmented nature of charitable food provisioning and entrenchment of services. Thus, the network of community-based meal programs suggests food insecure populations would experience difficulties receiving consistent daily services from individual programs.

Research in Toronto indicated that the majority of programs operated their services fewer than five times every week, and there was a paucity of services offering meals on the weekend (Gaetz et al., 2006). These service delivery problems in Toronto appear to be due to the
uncoordinated nature of meal programs within a community (Tarasuk & Dachner, 2009; Tse & Tarasuk, 2008). Other than the Out of the Cold organization offering a targeted coordinated service, most programs scheduled their meal delivery to align with infrastructure availability or served meals when other services in a program were in operation. These results have been corroborated by another study conducted in Northern California, suggesting a lack of coordination between programs creates a network that is both ad hoc and fragmented (Silliman & Wood, 2001).

One study indicated that many meal program coordinators were attempting to address hunger within a community (Dachner et al., 2009). Indeed, although most programs professed that they had introduced nutrition standards, several operators experienced difficulties abiding by those standards (Tarasuk & Dachner, 2009). This study suggests difficulties within an initiative such as an inability to adhere to instituted nutrition standards stem from the precarious nature of balancing incoming resources and demands on the program (Tarasuk & Dachner, 2009).

2.2.2.4 Who is Being Fed?

Although many meal programs accommodate the unmet food needs of homeless populations, some research has reported that a broad eclectic group of individuals have accessed these initiatives (Burt et al., 1999; Tarasuk & Dachner, 2009). According to a recent study, program providers approximated that half of patrons accessing their meal services were homeless (Tarasuk & Dachner, 2009). These findings suggest that a large proportion of the clientele frequenting meal programs were likely low-income housed individuals or considered to be at risk of homelessness. Many program coordinators described their program as “preventing homelessness” or enabling low-income populations to allocate their limited resources to affordable housing payments (Tarasuk & Dachner, 2009). These findings highlight that although
meal programs may be serving a substantial number of homeless individuals, low-income populations may also be regularly accessing these services for nutritional support.

Reports have suggested that “opening the back door” or establishing programs that provide permanent housing to help individuals transition out of vulnerable situations will greatly reduce the number of homeless people living in communities (National Alliance to End Homelessness, 2006). However, the National Alliance to End Homelessness has also recognized that homeless individuals still require support once they have been housed because they are unlikely able to financially support themselves. Therefore, it is necessary for programs catering to homeless individuals to remain accessible to low-income housing populations because both groups often require the same services. Additionally, the report acknowledges that homelessness does not happen overnight but is a gradual deteriorating process, and services must be implemented that produce preventative strategies to effectively “close the front door” or prevent those from entering into homelessness (National Alliance to End Homelessness, 2006). Ultimately, these reports argue for a continuum of care that must be established to quickly remove homeless individuals from the streets while introducing preventative measures to reduce the number of people who transition into homelessness.

2.3 Adequacy and Accessibility of Community Meal Programs

Although few studies have investigated the nutritional adequacy of meals, reports of charitable meal programs in Canada, Europe, and the United Kingdom have indicated that the majority of meals contain mainly sugars and starches whereas protein, fruits and vegetables, and dairy products are often underrepresented (Bocskei & Ostry, 2010; Coppenrath, 2001; Darmon et al., 2001; Evans & Dowler, 1999; Tse & Tarasuk, 2008). Although these results may offer a potential explanation why homeless populations must resort to other food acquisition strategies
to supplement nutritionally inadequate meals (Dachner & Tarasuk, 2002; Anema et al, 2011), the overall capacity and general effectiveness of these meal provisioning systems to respond to the needs of their clientele must be called into question (Tarasuk et al., 2009; Gaetz et al., 2006).

Although studies have reported that meals served by community meal programs are nutritionally insufficient (Bocskei & Ostry, 2010; Coppenrath, 2001; Darmon et al., 2001; Evans & Dowler, 1999; Tse & Tarasuk, 2008), only a few studies have questioned the effectiveness and accessibility of meal services in communities (Dachner et al., 2009; Eisinger, 2002; Linares, 2001). For example Dachner et al. (2009) examined the adequacy and accessibility of meal programs in Toronto. They listed various meal programming characteristics that influenced food insecure populations’ ability to access and receive a nutritionally adequate meal. The ad hoc, fragmented and uncoordinated origins of meal provisioning programs, the volunteer driven workforce, and the basic goal for hunger relief are a few indicators of the problems associated with food programs in Toronto. Tarasuk & Dachner (2009) also proposed that programs were heavily reliant on limited resources and donations, which jeopardized program service delivery. Thus, program’s preoccupation with maintaining resource supply may counteractively cause programs to pay less attention to problems associated with user’s demands (Rock, 2006; Tarasuk & Eakin, 2003). In addition, Eisinger’s (2002) examination of charitable-based meal programs in Detroit suggested that the fragile organization of services was largely reliant upon a temporary volunteer workforce, and programs without paid staff to manage services, and the storage of data to monitor program delivery ultimately limited the program’s capacity to balance their resources with the unmet food needs of their clientele. Lastly, Linares (2001) noted that a large number of homeless and under housed populations were heavily reliant on meal programs in Spain however; the majority of meals were served during lunch periods and there was a paucity of
service during breakfast and dinner hours throughout the week which compromised the responsiveness of services to nutritionally vulnerable populations. These studies acknowledge that although community-based meal programs reflect the compassionate nature of the citizens who support the initiatives, drastic changes are necessary to more adequately provide for the people that they serve.

To date, most studies have focused on community meal provisioning in Toronto and thus have limited generalizability to different urban centers across Canada (Tarasuk & Dachner, 2009; Dachner et al., 2009; Dachner & Tarasuk, 2002). Considering meal initiatives are largely community-driven, Toronto’s food provisioning network may not reflect other city’s meal provisioning systems because of marked differences in social assistance policies in which these programs are embedded (Gaetz et al., 2006). Moreover, most studies have focused on one point in time and have not commented on temporal changes to the system (Tarasuk & Dachner, 2009). This evolving system has led to the organization of several different types of community meal programs and contrasting perspectives on how to manage populations affected by food insecurity. Research examining temporal changes would provide a better understanding for the directionality and changes to the scope of community-based meal programs and offer insight into the future trends of these initiatives.

2.4 Summary

Studies investigating low-income housed groups (Canadian Community Health Survey, 2004; Health Canada, 2008) and homeless individuals (Bunston & Breton, 1990; Dachner & Tarasuk, 2002; Hwang & Bugeja, 2004; McCarthy & Hagan, 1992) have reported a high prevalence of food insecurity and negative health outcomes among these populations. In response to growing problems of food insecurity, Canadian communities continue to be charged
with the task of defining and resourcing initiatives to help people meet their basic needs. In recent years, more and more community-service agencies and faith groups have introduced free or low-cost meal programs to help people in their communities. Community food assistance programs are now deeply entrenched, but their effectiveness is questionable. Dachner et al. (2009) argues that the genesis of meal programs is often ad hoc, fragmented, and uncoordinated and there has been little systematic examination of how they function relative to need. This is of particular interest as there is evidence that meal services are not be able to adequately respond to populations experiencing food insecurity (Gaetz et al., 2006; Tarasuk & Dachner, 2009), and may justify the need for progressive public policy amendments to improve community-based meal programs.
Chapter 3 - Rationale and Research Objectives

In response to increasing concerns about food insecurity and homelessness across the country, there has been a proliferation of community-based meal programs in Canadian urban centers. These initiatives have functioned as a sort of ‘food safety net’ for those unable to meet their food needs independently, and as such, they comprise a critical response to local problems of severe food insecurity. However, there has been limited research to date investigating the responsiveness of programs to food insecure populations. Findings from one study in Toronto in 2005 have suggested community-based meal programs were ad hoc, fragmented, uncoordinated, reliant on donations and volunteer labour, and unable to adequately respond to the needs of populations experiencing food insecurity (Tarasuk & Dachner, 2009; Dachner et al., 2009). However, this study has limited generalizability to other urban centers and has not been reproduced in other Canadian settings. Moreover, studies by Tarasuk & Dachner, 2009 and Dachner et al., 2009 have also described the meal provisioning landscape as a network that is in constant flux resulting from difficulties attempting to manage incoming resources and the demands of the clientele. This evolving system has led to the organization of several different types of community meal programs and contrasting perspectives on how to manage populations affected by food insecurity. Thus, systematically examining the scope and nature of meal programs in Canadian cities is necessary to inform our understanding of the operation, management, and delivery of meal services and to identify how program operations influence the ability for services to respond to vulnerable populations. What follows is a brief overview of the studies and objectives for this research.

Our study will draw upon existing data from a 2010-2011 study involving five Canadian cities investigating community-based inventories of charitable food provisioning. The study
will evaluate the accessibility and adequacy of meal programs in five cities, and provide an understanding of the structural strengths and limitations of the current food provisioning systems within each urban center. This examination will allow us to derive public health policy recommendations, which can be developed to improve the response of local food initiatives. Consequently, the main objectives for the study included:

1. To describe the scope and nature of meal provisioning in five Canadian cities: Victoria, Edmonton, Toronto, Quebec City, & Halifax;

2. To compare the meal services of agencies offering multiple services and supports to those of agencies only providing basic emergency support.

3. To assess the ability for meal programs to respond to the unmet food needs of those experiencing food insecurity at the system level.
Chapter 4 – Methods

4.1 Primary Data Collection

The data for the study was drawn from a CIHR-funded study investigating community-based meal programs and food banks across five Canadian cities: Victoria, Edmonton, Toronto, Quebec City, and Halifax. The five cities were chosen because they afforded us the opportunity to compare and contrast community-based responses to hunger and food insecurity across Canada. Moreover, although it is understood that there are large populations of homeless individuals residing in urban centers across Canada, a significant number of housed individuals are also experiencing food insecurity (Table 1). As evidenced in Table 1, between 2009 and 2010, 8.4% of the Canadian population had experienced some form of food insecurity and these values varied depending on the city or community (Canadian Community Health Survey, 2009-2010). Although food insecurity was measured at the household level, Quebec City had a smaller proportion of households experiencing severe food insecurity (1.7%) compared to other cities such as Halifax where 10.5% of households experienced some form of food insecurity.

Table 1. Basic description of food insecure households by Canadian cities in 2009-2010.

<table>
<thead>
<tr>
<th>Cities</th>
<th>Households (rounded, except for 'All urban Canada)</th>
<th>Food secure + Marginal food insecurity</th>
<th>Moderate food insecurity</th>
<th>Severe food insecurity</th>
<th>Total food insecurity (moderate + severe)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Halifax</td>
<td>118,250</td>
<td>89.7%</td>
<td>6.1%</td>
<td>4.2%</td>
<td>10.3%</td>
</tr>
<tr>
<td>Quebec City</td>
<td>280,750</td>
<td>95.0%</td>
<td>3.3%</td>
<td>1.7%</td>
<td>5%</td>
</tr>
<tr>
<td>Toronto</td>
<td>1,934,700</td>
<td>90.8%</td>
<td>6.1%</td>
<td>3.1%</td>
<td>9.2%</td>
</tr>
<tr>
<td>Edmonton</td>
<td>347,300</td>
<td>91.9%</td>
<td>5.5%</td>
<td>2.6%</td>
<td>8.1%</td>
</tr>
<tr>
<td>Victoria</td>
<td>127,750</td>
<td>90.6%</td>
<td>5.5%</td>
<td>4.0%</td>
<td>9.5%</td>
</tr>
<tr>
<td>Canada</td>
<td>8,820,559</td>
<td>91.6%</td>
<td>5.5%</td>
<td>2.9%</td>
<td>8.4%</td>
</tr>
</tbody>
</table>

*These data were referenced from the Canadian Community Health Survey (2009-2010).

A comprehensive telephone survey was administered to program directors between November 2010 and September 2011. Agencies located in Toronto and Victoria were
interviewed in 2010 and 2011 whereas the remaining community interviews occurred in 2011. Program eligibility required that they provided meal assistance in the form of groceries, meals, or snacks. Programs requiring membership or enrollment to receive food such as group homes were not included because they did not directly respond to food insecurity issues. Also, programs catering to children (e.g., school programs) were not included because research questions the relevance of these programs to generalized household food insecurity (Williams et al., 2003; Raine et al., 2003; Vozoris & Tarasuk, 2003). Other exclusion criteria included: meals costing more than a nominal fee (two dollars), providing only food vouchers, collective kitchen or garden programs, and programs that only fundraise but provide no food.

Trained research assistants collected a comprehensive inventory of all community food programs that met these selection criteria within these five cities, considering both meal programs and food banks. Research assistants had local knowledge and were familiar with meal programs operating in their respective communities. As a result, research assistants were primarily responsible for collecting information from their respective cities and feedback was provided from other study collaborators. None of the cities maintained comprehensive lists of food provisioning programs. Thus, the collection of community food program information was gathered from meal provisioning registries, websites, and cross-referenced with local records. Programs included in the inventory were operational at the time of the data collection (November 2010-September 2011) and accessible to individuals experiencing some form of food insecurity.

Originally, 960 agencies were identified and included in our five-city inventory; after accounting for all agencies that were currently operational and removing initiatives that did not meet the study criteria, a total of 617 programs were identified. Out of this number, 535 agencies participated in a telephone interview (84% participation rate). Table 2 summarizes the
participation rates and ineligibility numbers from each city:

Table 2. Summary of agency participation in the study.

<table>
<thead>
<tr>
<th>City</th>
<th>Inventory</th>
<th>Ineligible</th>
<th>No longer in service</th>
<th>Non-response</th>
<th>Unable to contact</th>
<th>Declined</th>
<th>Final Sample</th>
<th>Participation Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Victoria</td>
<td>85</td>
<td>28</td>
<td>4</td>
<td>3</td>
<td>0</td>
<td>2</td>
<td>48</td>
<td>91%</td>
</tr>
<tr>
<td>Edmonton</td>
<td>194</td>
<td>81</td>
<td>7</td>
<td>6</td>
<td>1</td>
<td>3</td>
<td>97</td>
<td>91%</td>
</tr>
<tr>
<td>Toronto</td>
<td>423</td>
<td>143</td>
<td>13</td>
<td>36</td>
<td>15</td>
<td>7</td>
<td>233</td>
<td>80%</td>
</tr>
<tr>
<td>Quebec City</td>
<td>167</td>
<td>38</td>
<td>5</td>
<td>16</td>
<td>0</td>
<td>2</td>
<td>106</td>
<td>85%</td>
</tr>
<tr>
<td>Halifax</td>
<td>91</td>
<td>29</td>
<td>2</td>
<td>6</td>
<td>2</td>
<td>1</td>
<td>51</td>
<td>85%</td>
</tr>
<tr>
<td>Total</td>
<td>960</td>
<td>319</td>
<td>31</td>
<td>67</td>
<td>18</td>
<td>15</td>
<td>535</td>
<td>84%</td>
</tr>
</tbody>
</table>

A research assistant in each of the specified cities conducted a phone interview with the coordinator of each food program and systematically collected information on program goals, general operating procedures, service demographics, capacity and overall effectiveness. More specifically, the questionnaire documented information pertaining to: 1) The type of agency, 2) Frequency and volume of services, 3) Agency resources (food, money, and staff), and 4) Planning, evaluation, and other services. The questionnaire that was utilized during telephone survey is provided in the Appendix.

For the purposes of this analysis, we sought to investigate agencies providing immediate food relief; thus this dataset only included agencies offering a meal program. Of five hundred and thirty-five agencies, 54% (n=290) provided a meal program (see flow chart). When describing the organization or meal programs, results from the interview questionnaire were often cross-referenced with information from agency websites and details provided from agency directors during follow-up phone calls to ensure we had collected accurate data.
Flowchart describing the generation of the analytic study sample (n=290).

4.2 Statistical Analyses

The analysis of the collected data was conducted using SAS statistical software, version 9.2 (SAS Institute, Cary NC). Descriptive statistics were primarily used to examine characteristics relating to the organization, management, resources, and program delivery within and between cities. Variables were reviewed to remove all cases where there was missing or incomplete data, and these omissions have been identified in the relevant tables and figures in the subsequent results sections. For open-ended responses where program directors elaborated upon specific characteristics relating to program delivery, answers were classified and coded based on key words and phrases to convert qualitative responses into useable quantitative data. When
examining the scope and nature of meal provisioning (Chapter 5), the city variable was primarily used as a covariate to examine individual agency differences between communities. Simple logistic regression was used for analyses examining the relationships between binary variables and the nature of the operation and service delivery among agencies. In order to compare differences between multiple cities and/or types of agencies, chi-square tests were used to examine relationships relating to program delivery. For comparisons between the management of meal programs and the volume of meal provisioning, spearman correlation coefficients and t-test analyses were used to compare agencies with hired staff versus those without. A p-value of less than 0.05 was considered statistically significant for these tests.

Variables relating to program delivery were tested for normality using a Shapiro-Wilk test. A p-value of less than 0.05 suggested that variables were not normally distributed. We also confirmed these findings by creating a normality plot and assessing the curve of the line. Straight lines represented data that was normally distributed and curved lines represented non-parametric data. For non-parametric statistics, the Wilcoxon-Mann-Whitney test was used to test differences between two types of agencies. To look more closely at program delivery characteristics that predicted the volume of meal provisioning, a linear model was developed. Log transformations were applied to key continuous variables that had a Shapiro-Wilk test p-value of less than 0.05 in order to satisfy the statistical conditions necessary to correctly interpret linear regression results.

In order to examine characteristics that related to an agency experiencing difficulties managing the supply of resources with the demand for food from their clientele, a multivariate model was created using variables that were independently associated with an agency experiencing strain at a significance of p<0.05 in univariate analyses.
In order to present a comparative analysis examining totality of meal provisioning occurring between cities, a weighting for the total volume of meals served by agencies in each community was applied to the outcome variables when conducting logistic regression analyses (Chapter 7). This afforded us the opportunity to evaluate and compare the responsiveness of meal provisioning in each community to problems of hunger and homelessness. A p-value less than 0.05 was considered statistically significant for all tests. More detailed descriptions of specific statistical models are provided in the subsequent chapters.
Chapter 5 – Scope and Nature of Meal Programs

This section describes the scope and nature of community-based meal programs in Victoria, Edmonton, Toronto, Quebec City, and Halifax. More specifically, this section considers 1) who is serving meals; 2) the total volume of meal provisioning; 3) frequency of service; 4) workforce demographics; 5) resources; and 6) individual agency responsiveness. The purpose of this section is to gain insight into the totality of services within each city and to better understand the nature of service delivery associated with community-based meal programs.

5.1. Description of Organizations Serving Meals
5.1.1 Agency Types

The genesis of community-based meal programs was often ad-hoc and resulted in a multitude of different organizations serving food. It was important to categorize and examine different organization’s food provisioning efforts to gain insight into the types of agencies that were operating in each city. Agencies were classified based on answers provided by survey respondents and in some cases this information was cross-referenced with agency website information. Using this information, agencies were classified into four main groups: 1) Church/synagogue/mosque/faith-based center (Faith group), 2) Community-service agency (which included both community-centre services, day shelters, and drop-in agencies offering a variety of services), 3) Faith-based ministry, or 4) Other agency, which included independent food programs, health centers, soup kitchens, and educational institutions. For the purposes of this study, agencies were classified as community-service agencies if they offered a range of supports such as healthcare, transitional housing networks, social services, and financial aid while operating a meal program. ‘Faith-based ministries’ offered similar services as community-service agencies but operated as a faith-based social service agency within a larger...
denominational organization such as the Salvation Army. Our dataset consisted of 86 (30%) faith groups, 113 (39%) community-service programs, 57 (20%) faith-based ministries, and 34 (12%) Other programs (Table 3).

Table 3 illustrates the number and proportion of organizations that operated within each city. None of the agencies surveyed in Quebec City identified themselves as faith groups, whereas 39% of organizations offering meal services in Toronto were faith groups. However, there were also a significant number of community-service agencies and faith-based ministries operating in all cities.

5.1.2 Food Banks

Of all agencies serving meals, 43% also operated a food bank. However, although most cities reported between 35-50% of agencies operating a food bank, 81% of agencies in Quebec City providing meals operated a food bank as one of their services (Table 3). These results suggest that there was more integration between community meal programs and food banks in Quebec City compared to other cities.

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Percent (number)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Agency type</strong></td>
<td>Victoria n=28</td>
</tr>
<tr>
<td>Faith groups</td>
<td>29% (8)</td>
</tr>
<tr>
<td>Community-service agencies</td>
<td>39% (11)</td>
</tr>
<tr>
<td>Faith-based ministries</td>
<td>25% (7)</td>
</tr>
<tr>
<td>Other</td>
<td>7% (2)</td>
</tr>
<tr>
<td><strong>Operating food bank</strong></td>
<td>36% (10)</td>
</tr>
</tbody>
</table>

5.1.3 Year of Origin

It was important to examine when agencies started serving food to better understand the relative degree of entrenchment of these services. Interestingly, there were very similar trends
when comparing the year when agencies began providing food assistance between cities (Figure 1). It is worth noting that for agencies with food banks, we do not know the exact time that meal services began because our question asked the earliest year when any form of food assistance was offered. As an aside, there were no significant differences when separating agencies offering a food bank and meal service from those offering just a meal service within each city when considering the year when agencies began serving food. Although 74% of agencies began serving food after 1985, between 70-80% of agencies had been serving food since 2000. This suggested most agencies began serving food between 1985 and 2000 and had been offering meal services for an extended period of time.

Interestingly, when agency directors were asked to comment on their reason for starting to serve meals in the community, 95% of directors reported identifying a need in their community. The remaining 5% of agency directors suggested that they were fulfilling the mission of their organization by serving food to poor populations.

Figure 1. Summary of the origination of meal programs between cities (n=290).
5.2 Service Volume

5.2.1 Weekly Considerations

The examination of service volume allowed us to characterize how the totality of meal provisioning varied between cities and throughout the week. When identifying the total volume of meals served in each city, although 36% (n=103) of agencies did not serve every week or every month of the year, we compared the volume of meals served during a week when all agencies were serving meals. This allowed us to draw comparisons between cities when considering the total volume of meals served during a time when all agencies were operating. Although the total volume of food served throughout the week and the total number of agencies varied considerably between cities, there were similar service provisioning patterns (Table 4). For example, in all cities, the most meals served during one day were provided on a Tuesday, Wednesday, or a Thursday. Contrastingly, the fewest meals in all cities were served during the weekend. In terms of overall service provisioning, although Toronto had substantially more agencies compared to the other cities, they served the most meals every week (67852 meals per week). In contrast, Halifax only served 6048 meals every week.

There were also differences when comparing a week when all agencies were serving food (best case scenario) to a week when the greatest proportion of agencies was closed (worst case scenario). In all cities, all agencies were serving in October, November, December, January, February, March, April, or May and the worst case scenario occurred during a week in either July or August when many of the agencies were not operating their services. The greatest difference between a week when all agencies were serving and a week when services were not operating was most evident on weekends. The largest difference on a weekend occurred in Victoria during the month of August on a Saturday when there was a 61% (1399 meals}
meals) reduction in the number of meals served compared to a Saturday during January, February, or March when all agencies were serving. In comparison, the largest reduction in meals served during a weekday occurred in Quebec City on a Monday in July when there was a 38% (1426 meals → 885 meals) reduction in the number of meals served compared to a Monday in October-May when all agencies were operating. These results illustrate that there were large service volume fluctuations between days when all agencies were serving food compared to weeks when many organizations were not operating, especially during the weekends.

Table 4. Summary of the volume of meals served throughout the week (ranges represent worst-best case scenario) (n=290).

<table>
<thead>
<tr>
<th>Days</th>
<th>Victoria N=28</th>
<th>Edmonton N=43</th>
<th>Toronto N=164</th>
<th>Quebec City N=28</th>
<th>Halifax N=27</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sunday</td>
<td>932-1728</td>
<td>2712-3463</td>
<td>5412-6508</td>
<td>325-605</td>
<td>296-342</td>
</tr>
<tr>
<td>Monday</td>
<td>2720-2796</td>
<td>4539-4832</td>
<td>8653-10123</td>
<td>885-1426</td>
<td>956-1159</td>
</tr>
<tr>
<td>Tuesday</td>
<td>2465-2600</td>
<td>4762-5795</td>
<td>8887-10750</td>
<td>980-1535</td>
<td>1077-1135</td>
</tr>
<tr>
<td>Wednesday</td>
<td>2784-2916</td>
<td>4779-5813</td>
<td>9902-11896</td>
<td>914-1613</td>
<td>1036-1093</td>
</tr>
<tr>
<td>Thursday</td>
<td>2924-3026</td>
<td>5274-6271</td>
<td>10007-12180</td>
<td>840-1362</td>
<td>892-950</td>
</tr>
<tr>
<td>Friday</td>
<td>2549-2982</td>
<td>4854-5901</td>
<td>8486-10091</td>
<td>859-1377</td>
<td>857-916</td>
</tr>
<tr>
<td>Saturday</td>
<td>539-1399</td>
<td>3323-4616</td>
<td>6050-6753</td>
<td>365-705</td>
<td>492-526</td>
</tr>
<tr>
<td>Total</td>
<td><strong>14913-17466</strong></td>
<td><strong>30243-36965</strong></td>
<td><strong>57397-67852</strong></td>
<td><strong>5168-8706</strong></td>
<td><strong>5606-6048</strong></td>
</tr>
</tbody>
</table>

Figure 2 graphically displays the proportion of meals served throughout the week between cities. As displayed, although there were not large differences in the proportion of meals served throughout the week between the best case and worst case scenarios in most cities, there appears to be fairly large reductions in service throughout the week in Quebec City and during the weekend in Victoria. This suggests that agencies not operating year-round in these communities were responsible for serving a larger proportion of food compared to the other cities.
5.2.2 Daily Considerations

Service volume was further subdivided to consider hourly service times (Table 5). For this section, volume estimates illustrated a week of service when all agencies were in operation. It was important to determine both the number of agencies operating throughout the day and the number of meals that were available within a community to examine how the scale of total food provisioning fluctuated throughout the week and throughout a day. In this table we defined all meals served before 1100h as a breakfast service, meals served between 1100-1659h as a lunch service, and meals served from 1700-2359h as a dinner service. For agencies providing an overlapping service between different serving periods (n=106), we calculated the appropriate proportion of meals provided during each serving time. This calculation assumed there was an equal distribution of meals served during the entire serving time when it was possible that most meals were concentrated primarily within one serving period. For example, if one agency served 200 meals between 900h-1300h (900-1059=breakfast; 1100-1300=lunch) then meals were divided and expressed as 100 meals in the breakfast column and 100 meals in the lunch column.
More specifically, there were 10 overlapping agencies in Victoria, 15 in Edmonton, 57 in Toronto, 14 in Quebec City, and 10 in Halifax.

Table 5 depicts a varying distribution of meals served throughout the week. For example, in Edmonton, 25 agencies operated during a lunch time on Wednesday whereas only 7 agencies offered a lunch during a Sunday. However, it was important to consider extreme variations between service hours. From table 5, it was apparent that most meals were provided during lunch hours with a large reduction in service for both breakfast and dinner. There were 1695 meals served during a lunch period on a Monday in Victoria, whereas there were only 848 meals served during breakfast and 253 meals served during the dinner period. Additionally, in Toronto there were 37282 meals served during lunch meal times throughout the week whereas there were only 18526 meals served during breakfast hours and 12493 meals served during dinner hours. This trend remained the same across all five cities; however in Edmonton and Quebec City, dinner hours offered more meals compared to breakfast hours.
Table 5. Total number of meal programs operating (number of meals served in brackets) during breakfast, lunch and dinner serving hours between cities\(^1\) (n=290).

<table>
<thead>
<tr>
<th>Days of week</th>
<th>Victoria (n=28)</th>
<th>Edmonton (n=43)</th>
<th>Toronto (n=164)</th>
<th>Quebec City (n=28)</th>
<th>Halifax (n=27)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Breakfast (&lt;1100)</td>
<td>Lunch (1100-1659)</td>
<td>Dinner (1700-2359)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sunday</td>
<td>4 (808)</td>
<td>7 (767)</td>
<td>4 (153)</td>
<td>2 (47)</td>
<td>4 (128)</td>
</tr>
<tr>
<td>Monday</td>
<td>7 (848)</td>
<td>12 (1695)</td>
<td>4 (253)</td>
<td>15 (412)</td>
<td>15 (412)</td>
</tr>
<tr>
<td>Tuesday</td>
<td>8 (712)</td>
<td>12 (1623)</td>
<td>7 (265)</td>
<td>16 (371)</td>
<td>15 (373)</td>
</tr>
<tr>
<td>Wednesday</td>
<td>7 (847)</td>
<td>12 (1742)</td>
<td>8 (327)</td>
<td>15 (373)</td>
<td>15 (373)</td>
</tr>
<tr>
<td>Thursday</td>
<td>8 (861)</td>
<td>13 (1685)</td>
<td>7 (480)</td>
<td>14 (309)</td>
<td>14 (309)</td>
</tr>
<tr>
<td>Friday</td>
<td>5 (800)</td>
<td>8 (1620)</td>
<td>7 (562)</td>
<td>14 (315)</td>
<td>14 (315)</td>
</tr>
<tr>
<td>Saturday</td>
<td>4 (846)</td>
<td>5 (281)</td>
<td>2 (272)</td>
<td>4 (100)</td>
<td>6 (283)</td>
</tr>
</tbody>
</table>

\(^1\)Total volume of meals served during a week when all agencies were operating.

5.2.3 Coordination

Although we were unable to determine the exact degree of coordination between agencies operating within cities, we were able to identify one group of services that were coordinating...
their meal programs to provide consistent daily support throughout the week, which allowed us to examine their program delivery and service patterning. For example, we were able to identify several churches operating an Out-of-the-Cold program during the winter months in Toronto. Although we were only able to identify one network of agencies offering daily services throughout the week, it is conceivable that other isolated networks of agencies were coordinating their services within a community but the information was not captured in our data collection. The Out-of-the-Cold network coordinated their services so at least one membership agency was serving meals on each day of the week during the winter months. Although 15 faith groups were affiliated with the Out-of-the-Cold network, there were also 8 agencies that identified themselves as an Out of the Cold program but operated separately from the coordinated network of churches. For the purposes of this analysis, we only included agencies which specifically coordinated their services within a network to provide daily meal services throughout the week. Moreover, according to the Out-of-the-Cold website, 19 churches were operating as an Out-of-the-Cold agency thus; the entire network of services was not completely characterized. Our findings suggested that although there were agencies operating meal programs on a daily basis, there was extreme variation throughout the week (Table 6). However, when considering the overall variation of scheduling within Toronto, there was a precipitous drop-off during weekend services whereas the greatest volume of meals was served on a Sunday within the Out of the Cold organizations. Although the total volume of meals served by Out of the Cold organizations only accounted for 4% of the total volume of meals served over the course of one week, these results may suggest that the Out-of-the-Cold network attempted to compensate for the reduced service opportunities that were available on a Sunday.
Table 6. Scheduling of meal programs by Out of the Cold agencies in Toronto (n=15).

<table>
<thead>
<tr>
<th>Number of agencies operating</th>
<th>Sunday</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
<th>Saturday</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of meals served</td>
<td>770</td>
<td>620</td>
<td>335</td>
<td>245</td>
<td>227</td>
<td>450</td>
<td>215</td>
<td>2862</td>
</tr>
</tbody>
</table>

Another method of examining potential coordination between agencies was to investigate an agency’s reasoning for determining the schedule of their meal program. Our findings suggest that 74% (n=163) of agencies were forced to modify their meal provisioning because of specific agency restrictions which included: limited resource supply, reliance on volunteer workforce, limitations with space availability, and other program scheduling conflicts. In total, 12% (n=19) of agencies acknowledged that they considered clients needs when scheduling their program hours. More specifically, agencies may have limited their program hours to after school hours to allow youth to access their services or conducted a survey with clients to organize their meal program during a time that would be most convenient for most program users. Finally, 14% of agencies (n=23) considered other services operating in their community to determine meal program scheduling. For example, several programs scheduled their meal program delivery during a day when other agencies were not offering meals in their area to ensure that there was increased accessibility to meal programs throughout the week. These findings suggest that there most agencies were forced to modify their services because of program limitations and only a small subset of agencies considered clients needs or scheduled their program during a time when other agencies were not offering services.
5.2.4 Intensity of Service

Investigating the volume of meal provisioning during a given period of time allowed us to determine the intensity of service. This measure would provide valuable insight into the concentration of service provisioning and allow us to conduct a variety of analyses in the following sections to determine whether program delivery characteristics enabled or prevented a program from serving at a greater intensity. In terms of different variables that provided some indication of the intensity of service, we looked at the volume of meals being served per day of service, and examined the volume of meals being served per hour of service. Our findings suggest that there were significant differences between cities between both the number of meals/day of service (chi-square value=20.20; p-value=<0.001) and the number of meals served/hour of service (chi-square value=14.16; p-value=0.007), with Victoria serving with the greatest intensity and Quebec City serving at the smallest intensity in both cases. These results suggest that services operating in Victoria offered a highly concentrated volume of meals when they were providing meal programs to their clientele compared to programs in Quebec City which served a fewer volume of meals over the same period of time.

5.3 Service frequency

5.3.1 Daily Considerations

Of all agencies providing meals, the average number of days that one agency provided service on a weekly basis was 2.92 days (median=3.00; standard deviation=2.11; range=1-7). However, from figure 3, it appeared that in most cities, there was a bimodal distribution of agency service frequency every week. The majority of agencies (47%) served one to two days every week, however there were also a substantial number of agencies serving at least five days every week (38%). Of agencies serving at least five days every week, 68 (61%) were
community-service agencies, 30 (27%) were faith-based ministries, 10 (9%) were Other agencies, and 4 (4%) were faith groups. On the other hand, of agencies serving one to two days per week, 75 (54%) were faith groups, 29 (21%) were community-service agencies, 19 (14%) were faith-based ministries, and 15 (11%) were Other agencies. More specifically, agencies serving one to two days every week served on average 104 meals during a day when they were serving (standard deviation=119.37; range=5-660) whereas agencies serving at least five days every week served on average 160 meals during a day when they were serving (standard deviation=271.66; range=7-2104). Ultimately, these results suggest that the level of investment by individual agencies was extremely variable and ranged from some agencies only offering meals one day a week to agencies offering daily services throughout the week. Interestingly, there were significant differences between cities with respect to the proportion of agencies that served at least five days every week; 52% of agencies in Edmonton, 48% in Quebec City, 56% in Halifax, 36% in Victoria, and 31% of agencies in Toronto served at least five days every week (chi-square=12.01; degrees of freedom (d.f.)=4; p-value=0.017). This suggested that agencies in Edmonton, Quebec City, and Halifax provided more comprehensive nutritional support services throughout the week compared to agencies operation in Victoria and Toronto.

In terms of the 101 agencies that reported serving meals on weekends, 34 (34%) were community-service agencies, 31 (31%) were faith groups, 26 (26%) of agencies were faith-based ministries, and 10 (10%) were Other agencies. On average, agencies providing services during the weekend were responsible for serving 195 meals during a day when they were offering a meal program (standard deviation=290.34; range=13-2104). On the other hand, of the 189 agencies that did not provide services during the weekend, 79 (42%) were community-service agencies, 55 (29%) were faith groups, 31 (16%) were faith-based ministries, and 24 (13%) were
Other agencies. In comparison, agencies that did not provide services during the weekend were responsible for serving 83 meals during a day when they were offering a meal program (standard deviation=84.98; range=5-500). These results suggested that although there was a substantial reduction in the number of agencies offering a meal program during weekend serving times, agencies offering meals during a Saturday and Sunday were serving a greater volume of meals per day when they were providing services compared to agencies that did not provide weekend services.

Figure 3. Total number of days that each agency serves per week by city (n=290).

5.3.2 Weekly and Monthly Considerations

Although agencies varied their frequency of service throughout the week, there was also a substantial proportion of agencies that limited their meal services to specific months and/or weeks of the year. It was important to investigate agencies limiting their meal programs to determine how they impacted the total number of meal provisioning opportunities available to food insecure populations in each city. When comparing cities, 36% of agencies in Victoria, 38% in Edmonton, 37% in Toronto, 52% in Quebec City, and 11% of agencies in Halifax limited their services to specific weeks and/or months of the year (chi-square=10.33; p-value=0.035).
Although most cities had agencies that were limiting their services on a weekly basis, agencies in Halifax only limited their services on a monthly basis or served year-round. Of agencies limiting their services to specific months, organizations on average, offered meals for more than 6 months throughout the year. Interestingly, of 42 agencies limiting their services to specific weeks, 52% (n=22) only served food for one week every month.

Although almost all agencies served food during the winter months (January-March), there was a considerable reduction in agency operations during the summer season. Among the agencies that did not serve year-round, 97-100% operated between January and March whereas almost 30% were closed during the months of July and August in Quebec City and Toronto. Between 10-20% of agencies in Victoria, Edmonton, and Halifax were also closed during the months of July and August. There were also slight service reductions during the month of December; 88% of agencies in Victoria, 95% of agencies in Halifax, and 95% of agencies in Edmonton were operating during December. In many cases, program directors explained that a high concentration of meal programs operated during the winter holiday season which allowed regular agencies close their services.

Despite the considerable proportion of agencies that limited their services, service limitations had only a small impact on the total volume of meals served every month in most cities (Table 7). With the exception of Quebec City, agencies serving year-round in all cities served between 80-93% of the total number of meals during a month when all agencies were serving compared to agencies that limited their services. Interestingly, year-round agencies in Quebec City only served 65% of total meals every month. Thus, although over one third of agencies limit their services, the majority of meals were provided by agencies serving year-round.
Table 7. Program service provisioning over the year, by city (n=290).

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Victoria n=28</th>
<th>Edmonton n=43</th>
<th>Toronto n=164</th>
<th>Quebec City n=28</th>
<th>Halifax n=27</th>
<th>Overall n=290</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serving year-round</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proportion of agencies serving every month</td>
<td>64% (18)</td>
<td>62% (26)</td>
<td>63% (104)</td>
<td>48% (13)</td>
<td>89% (24)</td>
<td>64% (185)</td>
</tr>
<tr>
<td>Proportion of the total volume of meals served every month¹</td>
<td>90%</td>
<td>80%</td>
<td>85%</td>
<td>65%</td>
<td>93%</td>
<td>83%</td>
</tr>
<tr>
<td>Service limitations</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proportion of agencies not serving every month</td>
<td>14% (4)</td>
<td>17% (7)</td>
<td>24% (40)</td>
<td>22% (6)</td>
<td>11% (3)</td>
<td>21% (60)</td>
</tr>
<tr>
<td>Proportion of agencies not serving weekly</td>
<td>18% (5)</td>
<td>14% (6)</td>
<td>9% (15)</td>
<td>22% (6)</td>
<td>0% (0)</td>
<td>11% (32)</td>
</tr>
<tr>
<td>Proportion of agencies not serving monthly and weekly</td>
<td>4% (1)</td>
<td>7% (3)</td>
<td>3% (5)</td>
<td>7% (2)</td>
<td>0% (0)</td>
<td>4% (11)</td>
</tr>
<tr>
<td>Proportion of the total volume of meals served every month¹</td>
<td>10%</td>
<td>20%</td>
<td>15%</td>
<td>35%</td>
<td>7%</td>
<td>16%</td>
</tr>
</tbody>
</table>

¹ Total volume of meals served during a week when all agencies were operating.

5.4 Work Force

Workforce demographics were important factors to consider between cities because it allowed us to determine the proportion of paid staff versus unpaid workers working in meal services and examine the relationship between the size of program delivery and workforce. As illustrated in Table 8, 87% of the total workers supporting these agencies on any one day were volunteers. It was interesting to note that the average ratio of unpaid workers to paid staff working in each agency on any one day ranged from 2.17:1 in Halifax to 10.54:1 in Toronto. This suggested that there was a greater reliance on unpaid labour in Toronto compared to the other cities. More specifically, across all five cities there was 627 paid staff whereas there were 4862 unpaid workers working during a day when all agencies were serving food. It should be noted that although we may have underestimated the total number of workers in each community due to missing data, we may have overestimated the workforce numbers from the agencies reporting having a workforce because we were unable to determine the proportion of workers that were only working in a food bank for agencies operating a food bank and meal program.
Overall, 92% of programs utilized unpaid workers to assist in program delivery and 71% of agencies hired paid staff to help administer their services.

Although 98% of community-service agencies, 73% of faith-based ministries, and 87% of Other agencies had hired paid staff members, only 28% of faith groups employed paid staff to help support their meal services. Contrastingly, 100% of faith groups, 85% of community-service agencies, 100% of faith-based ministries, and 86% of Other agencies had unpaid workers supporting their meal services. More specifically, faith groups were significantly more likely to hire a greater number of unpaid workers compared to all other types of agencies and this association remained significant when accounting for the total volume of meals served every week (estimate: 13.98; standard error: 2.56; p-value: <0.001). These results suggest that faith groups had a much greater reliance on unpaid workers compared to the other types of agencies who were more likely to hire paid staff members to support their meal services.

In addition, many agencies hired security guards to help manage program delivery. In fact, 38% (105/276) of agencies employed a security guard and there were significant differences between cities with upwards of 49% of agencies in Edmonton and as few as 11% of agencies in Quebec City employing security guards (chi-square: 11.85; d.f: 4; p-value: 0.019). More specifically, 58% (61/105) of agencies that had hired security guards compensated them with monetary support however; there were no significant differences between cities.

Table 8. Workforce characteristics on any one day by city (n=268).

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Victoria n=27</th>
<th>Edmonton n=39</th>
<th>Toronto n=153</th>
<th>Quebec City n=26</th>
<th>Halifax n=23</th>
<th>Overall n=268</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of paid staff</td>
<td>55 (10%)</td>
<td>118.50 (26%)</td>
<td>320 (9%)</td>
<td>77 (27%)</td>
<td>56.50 (28%)</td>
<td>627 (14%)</td>
</tr>
<tr>
<td>Number of unpaid</td>
<td>483.50 (90%)</td>
<td>329 (74%)</td>
<td>3073 (91%)</td>
<td>206 (73%)</td>
<td>143.50 (72%)</td>
<td>4184 (86%)</td>
</tr>
<tr>
<td>workers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total workforce</td>
<td>538.50</td>
<td>447.50</td>
<td>3393</td>
<td>283</td>
<td>200</td>
<td>4862</td>
</tr>
</tbody>
</table>

*22 agencies with missing data were removed.*
We also examined the relationship between workforce demographics and the size of meal services. We hypothesized that paid staff would be positively related to operation size because an agency would have a dedicated workforce to organize, manage, and operate their meal services. From Table 9, it was apparent that there were generally significant positive relationships between the number of paid staff and the frequency of service and volume of meals served by each agency. Contrastingly, although there were non-significant negative correlations with respect to unpaid workers and the number of days an agency was serving every week, there were significant positive relationships between the number of unpaid workers and the overall volume of meals served every week in Victoria and Toronto. In addition, having a security guard was significantly related to serving more meals every week in Toronto (t-value= -3.17; p=0.002) and Quebec City (t-value=-5.31; p<0.001) and per day of service in Toronto (t-value=-3.43; p<0.001) and Quebec City (t-value=-4.82; p<0.001). These findings suggest that the number of paid staff and employing a security guard generally had stronger positive associations with respect to service size compared to the number of unpaid workers that supported an agency.

Table 9. Spearman correlation between number of paid staff and unpaid workers and frequency and volume of service by city (n=290).

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Victoria n=28</th>
<th>Edmonton n=43</th>
<th>Toronto n=164</th>
<th>Quebec City n=28</th>
<th>Halifax n=27</th>
</tr>
</thead>
<tbody>
<tr>
<td>Days/week</td>
<td>.55 (0.003)</td>
<td>.26 (0.11)</td>
<td>.54 (&lt;.001)</td>
<td>.73 (&lt;.001)</td>
<td>.24 (0.26)</td>
</tr>
<tr>
<td>Meals/week</td>
<td>.07 (0.07)</td>
<td>.18 (0.28)</td>
<td>.39 (&lt;.001)</td>
<td>.52 (0.007)</td>
<td>-.09 (0.66)</td>
</tr>
<tr>
<td>Number of unpaid workers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Days/week</td>
<td>-.20 (0.31)</td>
<td>-.14 (0.43)</td>
<td>-.14 (0.09)</td>
<td>-.02 (0.93)</td>
<td>-.08 (0.74)</td>
</tr>
<tr>
<td>Meals/week</td>
<td>.39 (0.05)</td>
<td>.22 (0.21)</td>
<td>.18 (0.03)</td>
<td>.31 (0.14)</td>
<td>.35 (0.12)</td>
</tr>
</tbody>
</table>

Blue box: Indicated significant positive relationship.
5.5 Resources

5.5.1 Food Donations

The examination of agency resources was necessary to better understand how an initiative supported their meal services. More specifically, an investigation of resources allowed us to depict the relationship between agencies and their reliance on donations and describe the distribution networks responsible for providing agencies with food. It is worth noting that 88% (22/25) of agencies in Victoria, 95% (39/41) of agencies in Edmonton, 90% (136/151) of agencies in Toronto, 100% (25/25) of agencies in Quebec City and 95% (21/22) of agencies in Halifax received donated food supplies. On average, agencies receiving food donations obtained 61% of their total food supply from donations (median: 70%; standard deviation: 33.80; range: 0.10%-100%). However it should also be noted that 25 agencies were removed due to missing data, thus it is conceivable that an even greater proportion of agencies in each city were relying on donated food supplies (Table 10).

Only 30 agencies surveyed received 100% of their total food supply from donated food. Of these agencies, 9 (30%) were located in Edmonton, 12 (40%) were in Toronto, 5 (17%) in Quebec City, and 4 (13%) in Halifax however none were located in Victoria. When considering organization type, 9 (30%) were faith groups, 14 (47%) were community-service agencies, 6 (20%) were faith-based ministries, and just 1 (3%) was an Other agency. In total, 18 (60%) of these agencies served year-round and 12 (40%) limited their services to specific months or weeks. Interestingly, 6385 meals/week (17% of total meals/week) were served by these agencies in Edmonton, 2763 meals/week (4% of total meals/week) in Toronto, 459 meals/week (5% of total meals/week) in Quebec City, and 533 meals/week (9% of total meals/week) were served by
agencies receiving only donated food supplies in Halifax. In terms of the meal services in Edmonton, one community-service agency was responsible for serving 5145 meals per week, which accounted for 81% of the total meals served by agencies receiving their entire food supply from donations in Edmonton. However, other than the one community-service agency in Edmonton, agencies receiving their entire food supply from food donations were not providing a large proportion of the total volume of meals served within each city.

Although many agencies relied on donated food supplies to operate their services, the actual source of donations varied considerably between agencies. Table 10 summarizes different donors providing food supplies to meal programs. These results suggested that there were significant differences between cities with respect to receiving donations from local businesses; 89% of agencies in Victoria, 67% of agencies in Quebec City, 58% of agencies in Toronto, 57% of agencies in Edmonton, and 31% of agencies in Halifax received donations from local businesses (chi-square=19.98; d.f= 3; p-value < 0.001). In terms of agency type, 56 % of faith groups, 57% of community-service agencies, 75% of faith-based ministries, and 48% of Other agencies received food from local businesses (chi-square=7.33; d.f= 3; p-value= 0.062). These results suggest that although there were no significant differences between agency types, there was a varying degree of reliance on local business donations between cities.

A substantial proportion of agencies were also affiliated with a major distributor in their community. For the purposes of this study, major distributors were defined as an organization that was responsible for collecting food supplies from corporate sponsors, local food industry businesses, and the general public and redistributing the supplies to local agencies offering a meal service or food bank. In almost all cases, with the exception of Second Harvest located in Toronto, the major distributors in each city were members of Food Banks Canada and functioned
as a part of a national system of food sharing to help support agencies serving food within the community.

In Toronto there were three major distribution organizations that supplied food to a variety of different agencies: Second Harvest, Daily Bread Food Bank, and North York Harvest. Second Harvest is an agency that collects and redistributes perishable food supplies from grocery stores, hotels and restaurants businesses, supporting over 200 member agencies that are operating a variety of meal services in the Toronto area (Second Harvest, 2011). The Daily Bread Food Bank is also a central agency that collects and redistributes food supplies to 170 member agencies located throughout the Greater Toronto Area (Daily Bread Food Bank, 2012). North York Harvest operates within North Toronto, and supplies food to 42 agencies that manages approximately 60 meal programs (North York Harvest, 2012). It is also worth noting that of 96 agencies affiliated with a major distributor in Toronto, 50% (n=48) were receiving food donations from two distributors. In all cases, agencies affiliated with two distribution agencies received food from Daily Bread Food Bank and Second Harvest.

Interestingly, although there were three major donations distributors in Toronto, there was only one distributor responsible for the allocation of food to community-meal initiatives in the other cities. In Edmonton the major food distributor was Edmonton Food Bank which allocates food to over 200 agencies and meal initiatives across the entire Edmonton downtown core (Edmonton Food Bank, 2012). The Mustard Seed agency did not explicitly state the number of agencies they distributed food to but suggested there were several meal services that were receiving their support (Mustard Seed, 2012); Feed Nova Scotia supplied food to over 150 agencies in Nova Scotia (Feed Nova Scotia, 2012); and Moisson Quebec provided food to 152 organizations in Quebec City (Moisson Quebec, 2012).
As illustrated in Table 10, 62% agencies received donations from major distribution agencies. In addition, although 85% of agencies in Quebec City and 83% of agencies in Edmonton received food from the major distributor in those cities, only 21% of agencies in Victoria were affiliated with the Mustard Seed. There were significant differences between the proportion of agencies receiving food from major distributors in each city which implied there was a varying degree of centralization and potential coordination between cities.

Table 10. The relationship between food donations and agencies by city (n=290).

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Victoria n=28</th>
<th>Edmonton n=43</th>
<th>Toronto n=164</th>
<th>Quebec City n=28</th>
<th>Halifax n=27</th>
<th>Chi-square statistic</th>
<th>p-value</th>
<th>Overall n=290</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proportion of agencies receiving food donations</td>
<td>88% (22/25)</td>
<td>95% (39/41)</td>
<td>90% (136/151)</td>
<td>100% (25/25)</td>
<td>95% (21/23)</td>
<td>4.41</td>
<td>0.354</td>
<td>92% (243/265)</td>
</tr>
<tr>
<td>Source of food donations</td>
<td>Major distributors</td>
<td>21% (6/28)</td>
<td>83% (35/42)</td>
<td>60% (99/164)</td>
<td>85% (23/27)</td>
<td>70% (19/27)</td>
<td>32.43</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td></td>
<td>Local businesses</td>
<td>89% (25/28)</td>
<td>57% (24/42)</td>
<td>58% (88/151)</td>
<td>67% (18/27)</td>
<td>31% (8/26)</td>
<td>19.98</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

*Missing data affect cell counts for some variables, so the actual numerator and denominator are provided for each proportion reported.

Although different distribution patterns were evident in each city, there were also significant differences between agency types and the probability of being associated with a major distributor within Toronto and Edmonton. For example, 100% of community-service agencies, 60% of faith groups, and 70% of faith-based ministries (Other agencies were removed because there was only one) received food from the Edmonton Food Bank (chi-square=9.60; d.f.=2; p-value=0.008), and in Toronto, 81% of community-service agencies, 42% of faith groups, 56% of faith-based ministries, and 52% of Other agencies received support from a major distributor (chi-square=19.13; d.f.=3; p-value=<0.001). Agencies were also significantly more likely to have an
affiliation with a major distributor if they were operating a food bank. More specifically, 78% of agencies operating a food bank were affiliated with a major distributor whereas only 49% of agencies without a food bank had an affiliation (odds ratio: 3.68; 95% confidence limits: 2.19-6.18; p-value: <0.001). When considering agencies working outside of these large distribution networks (n=112), 45% were faith groups, 20% were community-service agencies, 22% were faith-based ministries, and 13% were Other agencies.

As seen in Table 11, agencies in Victoria, Toronto, and Quebec City were significantly more reliant on donated food supplies if they were receiving food from a distributor compared to an agency that was not a part of a distribution network. Agencies receiving no donations from major distributors received approximately 40% of food from donations whereas programs receiving support from at least one distributor were obtaining, on average, approximately 70% of their food from food donations. However, when controlling for the presence of a food bank in each agency, the proportion of food received from donated foodstuffs only remained significant in Toronto. These results suggest agencies receiving support from Feed Nova Scotia and the Edmonton Food Bank were not as heavily reliant on donations from a major distributor compared to agencies receiving donations from a major distributor in other cities. This is interesting because the smallest proportion of agencies in Halifax were also receiving donations from local businesses compared to other cities. Thus, from these results, there is no clear pattern associated with agencies receiving donations in Halifax.
Table 11. Proportion of total food supply from donated foodstuffs among agencies that were and were not affiliated with major distributors (N=269).

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Proportion of donated foodstuffs between agencies that were and were not affiliated with a major distributor Percent (SD)</th>
<th>Chi-square statistic</th>
<th>p-value</th>
<th>Adj p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes n=180</td>
<td>No n=89</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Victoria n=28</td>
<td>66.20% (20.00)</td>
<td>37.35% (29.83)</td>
<td>4.10</td>
<td>0.047</td>
</tr>
<tr>
<td>Edmonton n=43</td>
<td>67.85% (31.47)</td>
<td>40.00% (40.37)</td>
<td>2.98</td>
<td>0.088</td>
</tr>
<tr>
<td>Toronto n=164</td>
<td>69.41% (29.40)</td>
<td>40.46% (34.55)</td>
<td>18.77</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Quebec City n=28</td>
<td>77.58% (27.95)</td>
<td>43.00% (32.19)</td>
<td>4.69</td>
<td>0.033</td>
</tr>
<tr>
<td>Halifax n=27</td>
<td>65.86% (33.57)</td>
<td>42.29% (42.44)</td>
<td>1.82</td>
<td>0.190</td>
</tr>
</tbody>
</table>

Test of significance used: Wilcoxon-Mann-Whitney test.

1. 21 agencies with missing data were removed.

2. P-value adjusted for the presence of a food bank.

5.5.2 Funding

Although the majority of agencies received food donations to augment their total food supply, it was also important to investigate the proportion of agencies that were receiving funding in each city. Our dataset only allowed us to determine the source of the funding and if the funding was specifically designated for meal services, but the survey interviews did not provide enough information for us to comment on the amount of money that each source provided. In total, 95% (n=263/276) of agencies received funding to support their services (Table 12). However, funding resources were divided up into two categories: shared funding and specific funding. Shared funding indicated that funding was distributed between all services that an agency operated whereas specific funding were funds that were specifically used to support meal services. On average, 52% of agencies received shared funding and 50% of agencies received specific funding. Within agencies receiving funding, 56% (n=146) received both shared and specific funding.

As discussed in the literature review, the Homelessness Partnering Strategy (HPS), formerly known as the National Homelessness Initiative (NHI), provincial governments, and
local community grants had been partially responsible for financially supporting agencies serving homeless populations across Canada (Human Resources and Skills Development Canada, 2011; Homeward Trust Edmonton, 2008; Province of Ontario, 2011). Thus, with funding support originating from various levels of government, it was important to determine the proportion of agencies that were receiving government funding to support their meal services. Although we were unable to determine the amount of funding, our dataset provided us with an indication of the number of agencies receiving government funding and grants. In total, 111 agencies received government funding. As evidenced in Table 12, there were significant differences between cities, with as few as 25% of agencies in Victoria and as many as 56% of agencies in Edmonton received government funding. More specifically, 71% of agencies received shared government funding and 29% received specific government funding. This suggested the majority of government funding was used to support a variety of different services within an agency.

Agencies also received funding from non-governmental sources, private donations, and by organizing fundraising campaigns. Sixty-two percent of agencies received funding from non-governmental organizations such as the United Way, 46% of agencies received charitable funding from individual donors and local businesses, and 46% of agencies organized their own fundraising campaigns to support their services.

Considering the relationship between agency type and funding, 94% of community-service agencies, 88% of faith groups, 88% of faith-based ministries, and 85% of Other agencies received funding. Within agency types, we were interested in determining the proportion of agencies that received specific and shared funding. There were significant differences between agency types; 82% of faith groups, 62% of Other agencies, 50% of faith-based ministries, and
39% of community-service agencies received specific funding for their meal services (chi-square value: 26.26; d.f.=3; p-value: <0.001) whereas 24% of faith groups, 50% of Other agencies, 58% of faith-based ministries, and 72% of community-service agencies received shared funding (chi-square value: 44.51; d.f.=3; p-value: <0.001). There were also significant differences between the proportion of agencies receiving government funding; 72% of community-service agencies, 41% of Other agencies, 14% of faith-based ministries, and 9% of faith groups received government funding (chi-square value: 98.23; d.f.=3; p-value: <0.001). These results suggest that although the majority of faith groups received specific funding for their meal services, most community-service agencies received shared and government funding.

Univariate analyses were conducted to examine the relationship between funding and the size of the operation, if an agency hired paid staff, or if an agency was affiliated with a major distributor. Evaluating these relationships would allow us to determine if specific program delivery characteristics influenced an agency’s ability to secure funding for their meal programs. Our findings suggest receiving funding was significantly associated with having paid staff (odds ratio= 2.49; 95% confidence limit=1.09-5.71; p-value=0.031), using nutrition standards (odds ratio= 3.26; 95% confidence limit=1.49-7.15; p-value=0.003), and being affiliated with a major distributor (odds ratio= 2.65; 95% confidence limit=1.21-5.78; p-value=0.015), but was not associated with the size of the operation (odds ratio= 1.000; 95% confidence limit=1.000-1.001; p-value=0.356). These results suggested an agency receiving funding was more likely to have dedicated paid staff members supporting their services, be affiliated with a major distributor, and used nutrition standards to plan their meals but was not necessarily related to the size of the operation.
In terms of the source of donations, receiving government funding was significantly related to being affiliated with a major distributor (odds ratio= 11.71; 95% confidence limit=5.66-24.20; p-value<0.001), having a paid staff member (odds ratio= 17.69; 95% confidence limit=7.39-42.37; p-value<0.001), using nutrition standards (odds ratio= 1.75; 95% confidence limit=1.03-2.99; p-value=0.040), but was not associated with the size of the operation (odds ratio= 1.000; 95% confidence limit=1.000-1.001; p-value=0.077). Evidently, although government funding appeared to be positively associated with hiring paid staff and using nutrition standards, agencies that were able to secure government funding continued to be reliant on receiving donated food supplies from major distributors.

Table 12. Sources and nature of agencies’ funding by city (n=290).

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Victoria n=28</th>
<th>Edmonton n=43</th>
<th>Toronto n=164</th>
<th>Quebec City n=28</th>
<th>Halifax n=27</th>
<th>Chi-square statistic</th>
<th>p-value</th>
<th>Overall n=290</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proportion of agencies receiving:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Funding</td>
<td>93% (26/28)</td>
<td>93% (39/42)</td>
<td>95% (146/153)</td>
<td>100% (27/27)</td>
<td>96% (25/26)</td>
<td>2.31</td>
<td>0.679</td>
<td>95% (263/276)</td>
</tr>
<tr>
<td>Shared funding for all services</td>
<td>46% (13/28)</td>
<td>58% (25/43)</td>
<td>49% (80/164)</td>
<td>54% (15/28)</td>
<td>70% (19/27)</td>
<td>5.34</td>
<td>0.254</td>
<td>52% (152/290)</td>
</tr>
<tr>
<td>Specific funding for meal services</td>
<td>54% (15/28)</td>
<td>37% (16/43)</td>
<td>52% (86/164)</td>
<td>57% (16/28)</td>
<td>48% (13/27)</td>
<td>3.94</td>
<td>0.414</td>
<td>50% (146/290)</td>
</tr>
<tr>
<td>Sources of funding</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fundraising</td>
<td>42% (11/26)</td>
<td>37% (15/41)</td>
<td>53% (82/156)</td>
<td>38% (10/26)</td>
<td>37% (10/27)</td>
<td>5.76</td>
<td>0.218</td>
<td>46% (128/276)</td>
</tr>
<tr>
<td>Charitable donations¹</td>
<td>79% (22/28)</td>
<td>53% (23/43)</td>
<td>63% (103/164)</td>
<td>71% (20/28)</td>
<td>44% (12/27)</td>
<td>9.23</td>
<td>0.056</td>
<td>62% (180/290)</td>
</tr>
<tr>
<td>Non-governmental organizations²</td>
<td>29% (8/28)</td>
<td>26% (11/43)</td>
<td>31% (51/164)</td>
<td>29% (8/28)</td>
<td>48% (13/27)</td>
<td>4.41</td>
<td>0.354</td>
<td>31% (91/290)</td>
</tr>
<tr>
<td>Government funding</td>
<td>25% (7/28)</td>
<td>56% (24/43)</td>
<td>35% (58/164)</td>
<td>29% (8/28)</td>
<td>52% (14/27)</td>
<td>11.50</td>
<td>0.022</td>
<td>38% (111/290)</td>
</tr>
</tbody>
</table>

*Missing data affect cell counts for some variables.
¹Includes donations from private donors and businesses
²Included donations from the United Way and the Salvation Army

Although most agencies were receiving some of their total food supply from donations, 19 agencies funded their entire meal program; 3 were in Victoria, 1 in Edmonton, and 15 were in Toronto. More specifically, 9 were faith groups, 6 were Other agencies, 3 were community-
service, and just 1 was a faith-based ministry. Ten (53%) of these agencies served year-round and nine limited their services to specific months or weeks. When considering the total volume of meals served every week by agencies receiving no donations, 1204 meals were served every week (7% of total meals/week) by agencies in Victoria, 250 meals/week (0.001% of total meals/week) were served in Edmonton, and 2492 meals/week (4% of total meals/week) were served by organizations in Toronto. These results suggest that agencies receiving no donations were not largely responsible for serving a large volume of meals in each city.

5.6 Responsiveness – Individual Agencies

This section describes an individual agency’s ability to respond to the unmet food needs of the populations they served. It was hypothesized that agencies who were better able to manage their resource supply with the demand for food would be more equipped to respond to the populations that they were serving. Therefore, this section considers if an agency 1) experienced indications of strain; 2) tailored their services to target specific populations; 3) used nutrition standards; and 4) experienced temporal changes with respect to service delivery. In terms of responsiveness, we examined the proportion of agencies that reported sometimes or often having to modify program delivery, experiencing difficulties receiving donated food supplies, or having problems securing financial support. Problems associated with program delivery, donated supplies, and financial support likely created a scenario where the demand for food from program users exceeded supply and agencies were forced to modify their services or compromise the adequacy of their meals. The purpose of this section is to gain insight into the totality of services within each city and to better understand the responsiveness of individual agencies.
5.6.1 Who Were They Targeting?

Across the five cities, organizations tailored their operation to respond to the specific needs of a targeted population. More specifically, agencies may have designed or modified their services to more adequately respond to individuals based on sex, age, or specific marginalized groups such as sex-trade workers, aboriginal people, or populations affected by mental illness (Table 13). In total, 48% of agencies tailored their operation to respond to the specific needs of a targeted population. When considering the types of organizations targeting specific populations, 70% of community-service agencies and 67% of Other programs targeted populations whereas only 39% of faith-based ministries and 22% of faith groups targeted populations (chi-square: 40.55; p-value: <0.001). The proportion of agencies targeting specific populations in each city ranged from 41% of agencies in Toronto to 67% of agencies in Quebec City, however there were no significant differences between cities (chi-square: 9.18; p-value: 0.057). It was interesting to note that there were 12 additional agencies that reported targeting poor populations; four of these agencies were located in Victoria, one in Toronto, six in Quebec City, and one agency was in Halifax. These agencies were excluded from our targeting analysis because although all agencies could hypothetically serve poor populations, other agencies restricted their access and tailored their services to respond to specific marginalized populations. It should also be noted, that 26 agencies were removed due to missing data, thus there may have been a greater representation of agencies targeting specific populations in each community.

It was important to consider the total volume of meals that were served by these targeted agencies to determine if these organizations were responsible for a small proportion of the total food served every week or if they operated larger meal services. Interestingly, 72% of food in Victoria, 67% of food in Edmonton, 39% of food in Toronto, 21% of food in Quebec City, and
52% of food in Halifax was served by agencies targeting specific populations every week. These results suggest that other than Quebec City and Toronto, agencies targeting specific populations were responsible for serving over half of the total volume of meals every week. Moreover, these results have implications when considering the accessibility of meals. Since some targeted programs had restricted access, it would not have been possible for some individuals experiencing food insecurity to receive a meal from every agency serving meals in a city. This suggests that although a substantial volume of meals was served in each community, some agencies may have imposed restricted access to specific populations, which would have paradoxically reduced the availability of meals for other individuals.

Table 13. Agency operation characteristics by city (n=290).

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Percent (number)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Victoria n=28</td>
</tr>
<tr>
<td>Targeting specific populations</td>
<td></td>
</tr>
<tr>
<td>Sex</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>0% (0)</td>
</tr>
<tr>
<td>Female</td>
<td>4% (1)</td>
</tr>
<tr>
<td>Age groups</td>
<td></td>
</tr>
<tr>
<td>Youth</td>
<td>8% (2)</td>
</tr>
<tr>
<td>Adults</td>
<td>4% (1)</td>
</tr>
<tr>
<td>Elderly</td>
<td>0% (0)</td>
</tr>
<tr>
<td>Marginalized groups</td>
<td></td>
</tr>
<tr>
<td>Homeless</td>
<td>13% (3)</td>
</tr>
<tr>
<td>Aboriginals</td>
<td>4% (1)</td>
</tr>
<tr>
<td>Mental illness and addiction</td>
<td>0% (0)</td>
</tr>
<tr>
<td>Families</td>
<td>13% (3)</td>
</tr>
<tr>
<td>HIV/AIDS</td>
<td>4% (1)</td>
</tr>
<tr>
<td>Other e.g., sex workers, students, immigrants</td>
<td>13% (3)</td>
</tr>
</tbody>
</table>

^1 26 agencies were removed because of missing data.
12 agencies targeted 2 distinct populations.
5.6.2 Nutrition Standards

Agencies offering meal services were inherently interested in feeding individuals; therefore, it was necessary to determine if those agencies were able to provide nutritionally adequate meals to the populations they were serving. Adhering to nutrition standards suggested agencies recognized the nutritional vulnerability of the populations they were serving and were attempting to organize their meal programs to provide a more responsive service. In the absence of direct observations of the meals provided, our only indication of the nutritional adequacy of meals was the proportion of agencies that used nutrition standards when preparing their food. Admittedly, the specific nutrition protocol that agencies followed may not have been the same between organizations, but the use of nutrition standards suggested an organization was interested in serving quality meals. From our dataset, 70% (n=196) of agencies reported using nutrition standards. Although there were no significant differences with respect to agency type or the presence of paid staff in an agency, the proportion of agencies utilizing nutrition standards differed significantly between cities; 81% of agencies in Victoria, 77% of agencies in Toronto, 63% of agencies in Quebec City, 56% of agencies in Halifax, and 52% of agencies in Edmonton used nutrition standards (chi-square=14.85; p-value=0.005).

Although two-thirds of agencies reported using nutrition standards, 38% (n=62) of agencies using nutrition standards had difficulties adhering to the standards they created. In this case, there were no significant differences between cities or between agency types. We hypothesized that an agency’s ability to adhere to nutrition standards would be related to the proportion of food that had been purchased by an agency and having a paid staff member working for an organization. However, there were no significant differences with respect to the proportion of purchased meals and an ability to adhere to standards. Surprisingly, the presence
of paid staff was significantly related to having difficulties adhering to nutrition standards (Odds Ratio=3.30; 95% CI=1.46-7.45; p-value=0.004). These results coupled with the earlier results discussing funding, suggest that although an agency’s ability to adhere to nutrition standards was not related to food supply, receiving government funding, and was negatively associated with hiring a paid staff member, some agencies may be more concerned with operating a meal program and serving nutritious meals compared to other agencies which may be more focused on managing other services within their agency.

5.6.3 Indications of Strain

In order to investigate an individual agency’s ability to respond to the unmet food need of the populations they served, we examined whether agencies experienced indications of strain relating to service delivery. An agency that experienced strain and modified their service delivery suggested the agency was not always able to adequately respond to the needs of their clientele (Table 14). On the other hand, agencies that did not experience strain were likely better equipped and more prepared to respond to the nutritional vulnerability of homeless individuals and populations experiencing food insecurity which produced a more effective service response. Although there were no significant differences between cities, approximately one third of agencies cut portion sizes, 25% turned people away/cut serving times, 45% served fewer types of food, and 48% served unplanned food. In addition, although there were significant differences between the type of agency and the probability of cutting portion sizes or serving fewer types of food, there were no significant differences with respect to the operation size and probability of experiencing strain (Table 14). Agencies that were affiliated with a major distributor were more likely to cut portion sizes, serve fewer types of food and were more likely to have experienced any indication of strain compared to those agencies that did not receive food from a major
Another really telling response in terms of a meal program’s ability to respond to the unmet food needs of their clientele was when we asked program directors whether program users needed more food. It was disconcerting to note that 78% (n=215/274) of meal program operators admitted that program users required more assistance in meeting their food needs than they were able to provide and almost 10% (n=23/274) of programs even admitted that they had no clue whether users required more food or not.

Table 14. Summary of agencies experiencing difficulties related to program delivery between cities, agency type, and size of operation (N=290).

<table>
<thead>
<tr>
<th>City</th>
<th>Cutting portion sizes</th>
<th>Serving fewer types of food</th>
<th>Serving unplanned food</th>
<th>Turn away clients/cut serving times</th>
<th>Any indication of strain n=276</th>
</tr>
</thead>
<tbody>
<tr>
<td>Victoria n=28</td>
<td>26% (7/27)</td>
<td>33% (9/27)</td>
<td>44% (12/27)</td>
<td>22% (6/27)</td>
<td>63% (17/27)</td>
</tr>
<tr>
<td>Edmonton n=43</td>
<td>45% (19/42)</td>
<td>39% (16/41)</td>
<td>45% (19/42)</td>
<td>29% (12/41)</td>
<td>71% (30/42)</td>
</tr>
<tr>
<td>Toronto n=164</td>
<td>42% (65/153)</td>
<td>43% (66/153)</td>
<td>55% (84/153)</td>
<td>23% (35/152)</td>
<td>72% (112/155)</td>
</tr>
<tr>
<td>Quebec City n=28</td>
<td>35% (9/26)</td>
<td>50% (13/26)</td>
<td>50% (13/26)</td>
<td>27% (7/26)</td>
<td>62% (16/26)</td>
</tr>
<tr>
<td>Halifax n=27</td>
<td>38% (10/26)</td>
<td>54% (14/26)</td>
<td>46% (12/26)</td>
<td>31% (8/26)</td>
<td>77% (20/26)</td>
</tr>
<tr>
<td>Chi-square statistic</td>
<td>3.44</td>
<td>3.05</td>
<td>2.21</td>
<td>1.34</td>
<td>2.51</td>
</tr>
<tr>
<td>p-value</td>
<td>0.498</td>
<td>0.549</td>
<td>0.698</td>
<td>0.854</td>
<td>0.643</td>
</tr>
<tr>
<td>Agency type</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Faith group n=86</td>
<td>39% (32/82)</td>
<td>33% (27/83)</td>
<td>43% (36/83)</td>
<td>20% (17/83)</td>
<td>61% (51/83)</td>
</tr>
<tr>
<td>Community-service agency n=113</td>
<td>50% (54/109)</td>
<td>56% (60/107)</td>
<td>60% (64/107)</td>
<td>27% (29/107)</td>
<td>82% (89/109)</td>
</tr>
<tr>
<td>Faith-based ministry n=57</td>
<td>30% (17/57)</td>
<td>30% (17/56)</td>
<td>46% (26/57)</td>
<td>14% (25/57)</td>
<td>61% (35/57)</td>
</tr>
<tr>
<td>Other n=34</td>
<td>27% (7/26)</td>
<td>52% (14/27)</td>
<td>52% (14/27)</td>
<td>32% (8/25)</td>
<td>74% (20/27)</td>
</tr>
<tr>
<td>Chi-square statistic</td>
<td>8.47</td>
<td>15.67</td>
<td>5.93</td>
<td>1.82</td>
<td>12.26</td>
</tr>
<tr>
<td>p-value</td>
<td><strong>0.037</strong></td>
<td><strong>0.001</strong></td>
<td>0.115</td>
<td>0.612</td>
<td><strong>0.007</strong></td>
</tr>
<tr>
<td>Affiliated with a major distributor¹</td>
<td>0.033</td>
<td>0.045</td>
<td>0.076</td>
<td>0.466</td>
<td><strong>0.043</strong></td>
</tr>
<tr>
<td>Size of operation²</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>p-value</td>
<td>0.783</td>
<td>0.519</td>
<td>0.108</td>
<td>0.431</td>
<td>0.140</td>
</tr>
</tbody>
</table>

Despite the resourcefulness of agencies to solicit and receive donations from a variety of sources, many agencies experienced difficulties with their donated food. In order to determine
an agency’s ability to manage donated food supplies, we examined the proportion of agencies that had difficulties storing and storing donated food, receiving enough donated food, and the proportion of agencies that received inedible food from donations. It was hypothesized that strain related to managing resource supply would likely play a critical role in determining whether a meal program was able to serve nutritiously adequate meals to their clientele.

Particularly in Quebec City, most agencies experienced difficulties securing enough food (77%) and securing edible food (88%) to supply their meal services. In terms of between-city comparisons, there were significant differences when comparing the probability of agencies experiencing difficulties securing enough food or securing edible food to supply their meal services (Table 15). There were also significant differences between agency type and the size of an agency when considering the proportion of agencies that reported experiencing difficulties managing their food supply. Evidently, agencies operating in Edmonton, and faith groups within all communities appeared to be least likely to experience strain relating to securing food supplies compared to other types of agencies.

In addition, considering a substantial proportion of agencies were affiliated with a major donations distributor, it was important to investigate whether an affiliation with a distributor reduced or increased the probability of an agency experiencing strain. Surprisingly, agencies affiliated with a major distributor were significantly more likely than agencies without an affiliation with a major distributor to have difficulties storing donated food (odds ratio= 3.88; 95% confidence limit= 2.07-7.27; p-value<0.001), sorting donated food (odds ratio= 3.83; 95% confidence limit= 2.05-7.18; p-value<0.001), receiving enough food (odds ratio= 2.11; 95% confidence limit= 1.21-3.67; p-value= 0.008), and receiving inedible donated food supplies (odds ratio= 5.15; 95% confidence limit= 2.87-9.22; p-value<0.001). Even after adjusting for the total
number of meals served by agencies, having difficulties storing donated food (odds ratio= 3.67; 95% confidence limit= 1.95-6.90; p-value<0.001), sorting donated food (odds ratio= 3.58; 95% confidence limit= 1.90-6.74; p-value<0.001), receiving enough food (odds ratio= 2.10; 95% confidence limit= 1.20-3.67; p-value=0.010), and receiving inedible donated food supplies (odds ratio= 4.48; 95% confidence limit= 2.46-8.13; p-value<0.001) were significantly associated with having an affiliation with a major distributor. These results suggested that having an affiliation with a major distributor predisposed an agency to experience difficulties managing their donated food supply.

Table 15. Summary of agencies experiencing difficulties related to donated food supply between cities, agency type, and size of operation (N=269).

<table>
<thead>
<tr>
<th>City</th>
<th>Having difficulties storing donated food</th>
<th>Having difficulties sorting donated food</th>
<th>Have difficulties receiving enough food</th>
<th>Have difficulties receiving inedible food</th>
</tr>
</thead>
<tbody>
<tr>
<td>Victoria n=25</td>
<td>33% (8/24)</td>
<td>17% (4/24)</td>
<td>63% (15/24)</td>
<td>67% (16/24)</td>
</tr>
<tr>
<td>Edmonton n=41</td>
<td>28% (11/39)</td>
<td>44% (17/39)</td>
<td>33% (13/39)</td>
<td>44% (17/39)</td>
</tr>
<tr>
<td>Toronto n=149</td>
<td>45% (61/135)</td>
<td>43% (58/136)</td>
<td>52% (71/136)</td>
<td>66% (90/136)</td>
</tr>
<tr>
<td>Quebec City n=28</td>
<td>54% (14/26)</td>
<td>50% (13/26)</td>
<td>77% (20/26)</td>
<td>88% (23/26)</td>
</tr>
<tr>
<td>Halifax n=26</td>
<td>50% (13/26)</td>
<td>58% (15/26)</td>
<td>46% (12/26)</td>
<td>73% (19/26)</td>
</tr>
<tr>
<td>Chi-square statistic</td>
<td>6.43</td>
<td>9.62</td>
<td>13.33</td>
<td>15.10</td>
</tr>
<tr>
<td>p-value</td>
<td>0.169</td>
<td>0.047</td>
<td>0.010</td>
<td>0.005</td>
</tr>
<tr>
<td>Agency type</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Faith group n=77</td>
<td>31% (21/68)</td>
<td>29% (20/69)</td>
<td>38% (26/69)</td>
<td>49% (34/69)</td>
</tr>
<tr>
<td>Community-service agency n=108</td>
<td>51% (53/104)</td>
<td>52% (54/104)</td>
<td>60% (62/104)</td>
<td>69% (72/104)</td>
</tr>
<tr>
<td>Faith-based ministry n=56</td>
<td>36% (19/53)</td>
<td>42% (22/53)</td>
<td>55% (29/53)</td>
<td>75% (40/53)</td>
</tr>
<tr>
<td>Other n=28</td>
<td>56% (14/25)</td>
<td>44% (11/25)</td>
<td>56% (14/25)</td>
<td>76% (19/25)</td>
</tr>
<tr>
<td>Chi-square statistic</td>
<td>9.60</td>
<td>8.97</td>
<td>8.40</td>
<td>12.26</td>
</tr>
<tr>
<td>p-value</td>
<td>0.022</td>
<td>0.030</td>
<td>0.038</td>
<td>0.007</td>
</tr>
<tr>
<td>Size of operation¹</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>p-value</td>
<td>0.090</td>
<td>0.064</td>
<td>0.593</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

¹21 agencies were removed because they did not receive any donations. Missing data affect cell counts for some variables.

Finally, an investigation of the proportion of agencies experiencing difficulties related to funding suggested that the majority of agencies had difficulties securing long-term funding and funding food costs. However, considering there were 27 agencies that did not receive funding,
this analysis only examined the 263 agencies that reported receiving financial support from any sources. These results indicated that although there were differences between cities and agencies, the financial instability of the majority of agencies likely influenced a meal program’s ability to deliver adequate and accessible services to their clientele (Table 16).

Table 16. Summary of agencies experiencing difficulties related to funding between cities, agency type, and size of operation (N=263).

<table>
<thead>
<tr>
<th>City</th>
<th>Having difficulties funding long-term</th>
<th>Having difficulties funding food costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Victoria n=26</td>
<td>56% (14/25)</td>
<td>28% (7/25)</td>
</tr>
<tr>
<td>Edmonton n=39</td>
<td>47% (18/38)</td>
<td>39% (15/38)</td>
</tr>
<tr>
<td>Toronto n=146</td>
<td>64% (85/132)</td>
<td>59% (68/116)</td>
</tr>
<tr>
<td>Quebec City n=27</td>
<td>70% (19/27)</td>
<td>62% (16/26)</td>
</tr>
<tr>
<td>Halifax n=25</td>
<td>65% (15/23)</td>
<td>57% (13/23)</td>
</tr>
<tr>
<td>Chi-square statistic</td>
<td><strong>5.03</strong></td>
<td><strong>11.33</strong></td>
</tr>
<tr>
<td>p-value</td>
<td><strong>0.285</strong></td>
<td><strong>0.023</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Agency type</th>
<th>Having difficulties funding long-term</th>
<th>Having difficulties funding food costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faith group n=77</td>
<td>38% (27/72)</td>
<td>25% (16/64)</td>
</tr>
<tr>
<td>Community-service agency n=107</td>
<td>75% (74/99)</td>
<td>72% (69/96)</td>
</tr>
<tr>
<td>Faith-based ministry n=50</td>
<td>62% (29/47)</td>
<td>44% (20/45)</td>
</tr>
<tr>
<td>Other n=29</td>
<td>78% (21/27)</td>
<td>61% (14/23)</td>
</tr>
<tr>
<td>Chi-square statistic</td>
<td><strong>27.91</strong></td>
<td><strong>35.65</strong></td>
</tr>
<tr>
<td>p-value</td>
<td>&lt;0.001</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Size of operation¹</th>
<th>Having difficulties funding long-term</th>
<th>Having difficulties funding food costs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.284</td>
<td>0.537</td>
</tr>
</tbody>
</table>

²7 agencies were removed because they did not receive funding.
Missing data affect cell counts for some variables.
¹Variable used=Meals served/week; Test of significance: logistic regression

5.6.4 Temporal Changes

It was also important to examine one-year changes within individual agencies to provide an indication of how the demand for meals and responsiveness to food insecurity changed temporally. By investigating the change in the number of people who frequented meal programs, we afforded ourselves the opportunity to examine how the demand for food had changed over the course of the year. From an agency perspective, agencies that were serving a greater volume of food had expanded their services to be able to accommodate and respond to a greater number of people whereas agencies that served fewer people contributed to the retraction of meal...
provisioning in some communities. Of the 265 agencies who reported the number of people they served food to on a daily basis, 88 agencies served more people and 34 agencies served fewer people over the past year. More specifically, 10 agencies in Victoria, 12 in Edmonton, 45 in Toronto, 11 in Quebec City, and 10 agencies in Halifax served more people over the past year. In addition, 34% were faith groups, 39% were community-service agencies, 17% were faith-based ministries, and 10% were Other agencies. The smallest increase in clientele was reported by an education centre in Halifax which increased their service by one person per day over the past year (1 person/day → 2 people/day), and the largest positive change in service was a 104 person per day increase reported by a faith group in Toronto (371 people/day → 475 people/day). However, when considering the temporal change as a proportion of the total number of people served on one day, one community-service agency only increased their service by 0.02% (98 people/day → 100 people per/day) whereas one faith group in Toronto reported a four times increase in service (5 people/day → 25 people/day). Of the 10 agencies which increased the number of people they were serving on a daily basis by over 100%, only 2 agencies were serving more than 100 people every day. It was also interesting to note that three faith-based organizations operating food banks had introduced meal programs in the past year. In their first year of operation, they were serving 9, 12, or 45 people on a daily basis. Overall, 90% of agencies reported less than a 50 person increase in service every day and 70% of agencies increased their service by 35% or less.

In comparison, 4 agencies in Victoria, 5 in Edmonton, 2 in Quebec City, 20 in Toronto, and 3 agencies in Halifax served fewer people over the past year. Of these agencies, 9 were faith groups, 14 were community-service agencies, 9 were faith-based ministries, and 2 were Other agencies. The smallest decrease in clientele was reported by two community-service agencies in
Toronto which decreased their service by one person per day over the past year (45 people/day \(\rightarrow\) 44 people/day; 8 people/day \(\rightarrow\) 7 people/day), and the largest negative change in service was a 100 person per day decrease reported by one faith group in Toronto (200 people/day \(\rightarrow\) 100 people/day) and one faith-based ministry in Victoria (300 people/day \(\rightarrow\) 200 people/day).

However, when considering the temporal change as a proportion of the total number of people served on one day, two community-service agencies in Toronto only decreased their service by 0.02% (240 people/day \(\rightarrow\) 235 people per/day; 45 people/day \(\rightarrow\) 44 people/day) whereas the largest reduction in service was reported by a community-service agency in Toronto which served 75% fewer people per day over the past year (20 people/day \(\rightarrow\) 5 people/day). Overall, 77% of agencies reported less than a 30 person decrease in service every day and 74% of agencies reduced the size of their meal service by one third or less.

In terms of temporal changes, we also examined differences between programs that were serving a greater number of people and programs that were serving fewer people to those programs that received no change in the number of clientele they served on a daily basis. This would allow us to determine if there were specific factors related to service delivery, resources, and funding that allowed a program to expand or forced a program to reduce their service capabilities. However, there were no significant differences when considering agency type, the presence of paid staff, receiving government or specific funding, receiving food from a major distributor, or the probability of experiencing strain between agencies serving more individuals per day over the past year and programs serving fewer individuals on a daily basis versus those that reported no change in service. These results are noteworthy because there was no clear pattern with respect to agency characteristics and increasing service size over the past year.
Overall, there was a net increase of 1296 people who were served over the course of one year between all five cities. In absolute terms, there was a range of increases from 572 people in Toronto to 107 people in Quebec City which was likely due to the large differences in the population size of each community. Using this data, it was important to investigate if agencies were becoming more reliant on donations or purchased meals to determine if the growth of this meal programs was occurring at the expense of receiving a greater proportion of donations. However, from our dataset, we identified 203 agencies that experienced no change in the proportion of meals that were being purchased and donated over the last year, 28 received a greater proportion of meals from donations, and 21 agencies received a greater proportion of meals from purchases. Thus, from this perspective, there does not appear to be any distinguishable pattern when considering the source of the meal supplies.

5.7 Summary

The purpose of this section was to provide an overview of characteristics relating to the organization, management, and resources between agencies operating in each Canadian city. Our results revealed that although agencies had been operating within communities since the early 1900’s, 74% of agencies began serving meals after 1985. The impetus for this rapid change was likely due to changing social policies across Canada that ultimately stimulated the development for a number of these initiatives. In terms of the organization of services, meal provisioning was occurring on a massive scale, with over 548,000 meals served every month in these cities. Although we were able to determine the total volume of meal provisioning occurring within each city, our data was limited by the fact that we did not ask agencies if or how they tracked their meal provisioning and we did not collect any data concerning the potential variation in the volume of meals served throughout the year. Consequently, we were unable to
ascertain whether the volume in meal provisioning fluctuated throughout the year during a week when agencies were offering meals, which required us to generate our own assumptions concerning the consistency of meal provisioning on a weekly basis. Thus, our results may not accurately depict the fluctuating level of responsiveness to food insecure populations because we were not able to capture any week-to-week meal provisioning variations within each community. However, although there were limitations associated with our analysis investigating the volume of feeding occurring within each city, it was apparent that the overall volume of meal provisioning reflected an extremely large collective response to address hunger and homelessness in each community.

With respect to the frequency and scheduling of services, there was extreme variation throughout any given day and throughout the week, with a paucity of meals available on weekends, and during breakfast and dinner hours. These findings have provided insight into the scheduling of agencies from a temporal perspective but we have yet to investigate the geographical dispersion and distribution limitations of agencies within communities. It was possible that locally distributed agencies proximal to one another scheduled their services in such a way that offered daily access to local clientele. However, to date, research has not captured potential geographical coordination between agencies due to the difficulties associated with defining and compartmentalizing localized spatial systems within communities thus, future studies are necessary to further elucidate the relationship between potential geographical pockets of coordination and the nutritional needs of the clientele residing in those areas.

Within all cities, there appeared to be limited coordination between agencies with respect to scheduling and planning to provide complete and comprehensive services to homeless and under-housed populations throughout the entire week. The only example of coordination was
managed by the Out of the Cold organization which operated out of Toronto churches and offered overnight shelter and a meal program throughout the winter months. Although there may have been other small networks of meal programs that we were unable to identify, the limited evidence of coordination suggests that the genesis of meal programs did not develop within a centralized network of support and as such, have remained as isolated entities responding to hunger within each city. Although we did note that the major distributors were distributing food supplies to many agencies within each community, they appeared to have no effect on the overall coordination of individual agencies with respect to scheduling and daily service provisioning.

From a management perspective, 92% of agencies had unpaid workers helping with program delivery. Interestingly, faith groups were more reliant on unpaid workers compared to other types of agencies whereas community-service agencies, faith-based ministries, and Other agencies were more likely to hire paid staff members. These differences may reflect the organizational differences between agencies where community-service agencies and faith-based ministries required paid staff members to manage and operate multiple programs addressing under housed and homeless populations.

Most agencies (92%) reported receiving food donations to augment their total food supply and approximately 63% of agencies received donations from a major distributor operating with their community. Interestingly, major distributors were affiliated with most agencies in Edmonton, Toronto, Quebec City, and Halifax however the Mustard Seed in Victoria appeared to be far more decentralized compared to distributors operating in the other communities. This may suggest that agencies operating in Victoria had to actively solicit donations from local businesses and individual donors rather than relying on a major distributor for food supplies.
Although 95% of agencies received funding, only half of the total agencies received funding specifically for their meal programs. More specifically, faith groups were more likely than other agencies to receive specific funding whereas community-service agencies were more likely to secure government funding which suggested that agencies offering multiple services had been identified as the optimal strategy to address homeless issues within a community and were consequently more likely to receive government support. However, one potential limitation associated with the funding variables is that we were not able to investigate the total allotment of funds directed to different types of agencies. Although we were able to examine the source of the funding, we were unable to differentiate the overall financial amount of support that agencies received.

One potential consequence of having limited funding for meal programs were that agencies may have experienced difficulties managing the demand for food from their clientele with their resource supply. In fact, the majority of program directors expressed difficulties managing the current demand for food assistance (e.g., cutting portion sizes, serving fewer types of food, serving unplanned food, turning away clients, and adhering to nutrition standards). However, it should be noted that program directors classified their agency as Never, Sometimes, or Often experiencing strain and agencies that responded as Sometimes or Often were grouped together because we were specifically interested in any scenario where an agency experienced strain. By grouping these two variables together, we were able to identify program characteristics that increased the probability of an agency sometimes or often ever experiencing strain. These findings were limited by the fact that responses were self-reported thus, a program director’s subjective interpretation of strain may have varied considerably between agencies but also due to the fact that it was impossible to differentiate the total extent of strain between
agencies because responses were broadly classified without utilizing a more precise scale to determine strain. Despite these limitations, these findings illustrated that the current system of meal provisioning often had to modify their services, experienced difficulties with their donated food supply, and had trouble securing funding for their services, suggesting that many agencies lacked the resources to meet the needs of all those who sought their help.

In summary, community-based meal programs were responsible for serving an extremely large volume of food to homeless and under-housed populations in each of the five cities. However, the scheduling of services varied by time of day and day of week, with a paucity of meals available on weekends, and during breakfast and dinner hours. Our findings suggest that there were many unique services serving meals within each community including faith groups, community-service agencies, faith-based ministries, and other types of agencies such as health centers and educational institutions. However, most agencies were heavily reliant on volunteer workforce, and donated food supplies. Consequently, in many cases program directors had difficulties managing their resource supply with the demand for food from their clientele resulting in over 70% of program directors expressed difficulties managing the current demand for food assistance (e.g., cutting portion sizes, serving fewer types of food, serving unplanned food, turning away clients, and/or cutting serving times).

The subsequent chapter will provide an in-depth examination and comparison of these characteristics from the perspective of agencies operating only a meal program versus those agencies that offer a comprehensive array of support to address homelessness and poverty. A final chapter will examine each community as a system of meal provisioning to determine the capacity of the system to respond to populations experiencing food insecurity.
Chapter 6 - Relationship between Agencies Offering Multiple Services versus Agencies Providing Temporary Emergency Services

While all agencies operated a meal program, the structure and organization of individual agencies differed considerably. As discussed in the literature review, several agencies emerged in response to growing support for issues concerning poverty and homelessness. These agencies provided several services targeting broader societal links for homeless issues and were often supported by funding grants from the Homelessness Partnering Strategy and provincial grants. With that being said, agencies offering meal services appeared to fall into two broad categories: 1) Agencies providing temporary services to low-income populations that offered basic ‘emergency’ assistance and 2) Agencies focusing on reducing problems associated with poverty and homelessness through the provision of multiple services and supports. It was important to compare these two types of agencies with respect to organization and service delivery to provide an informed discussion concerning the responsiveness of these initiatives and suggest future directions for community-based meal programs.

Basic service agencies were defined as agencies that provided immediate services that primarily addressed temporary hunger problems. Thus, for the purposes of this study basic service agencies included initiatives that provided only food or temporary overnight shelter. In contrast, multi-service agencies were defined as any agency that combined a variety of social services designed to reduce homelessness and poverty within a community such as meal programs, transitional housing assistance, financial support, healthcare, employment services, and a mixture of other programs.

The purpose of this section was to characterize and compare meal services in basic service versus multi-service agencies. More specifically, this section will compare the volume and frequency of services, resources, and indications of strain between the two types of agencies.
More specifically, we evaluated the number of meals served per week, per day, and per hour to provide an indication of the intensity of service provisioning during a time when agencies were serving food. As discussed in section 5.2 and 5.3, most agencies operated their services during the week, did not serve on a daily basis, and over one third of agencies did not serve year-round. With that being said, we examined the proportion of multi-service and basic service agencies that served at least five days every week, offered a meal service during the weekend, and served meals year-round. In terms of resources, we were interested in the proportion of agencies that received government funding, specific funding, hired paid staff, and were affiliated with a major distribution agency. Examining these variables allowed us to gain an understanding of how meal services were constructed in agencies focused on multi-service versus basic support. We examined the proportion of agencies that experienced strain and were consequently forced to cut portion sizes, serve fewer types of food, serve unplanned food, or turn clients away/cut serving times. Finally, we examined the proportion of agencies that reported using nutrition standards and the proportion of agencies that reported having difficulties adhering to the standards they created.

6.1 Description of multi-service and basic agencies

Of the 290 agencies serving food, 40% (n=115) offered basic services and 60% (n=175) offered multiple services. More specifically, 46% (n=13) of agencies in Victoria, 67% (n=29) in Edmonton, 56% (n=92) in Toronto, 82% (n=23) in Quebec City, and 67% (n=18) in Halifax offered multiple services. When considering agencies types, there were significant differences between groups; 97% of community-service, 65% of faith-based ministries, 62% of Other agencies, and 8% of faith groups were considered multi-service agencies (chi-square= 163.12; d.f.=3, p < 0.001) whereas 92% of faith groups, 38% of Other agencies, 35% of faith-based
ministries, and 3% of community-service agencies operated basic service agencies.

Service frequency, resource, and strain characteristics associated with multi-service and basic service agencies in bivariate analyses are shown in Table 17. Multi-service agencies were significantly associated with serving year-round, serving at least 5 days every week, receiving government funding, having a paid staff member, having a security guard, being affiliated with a major distributor, cutting portion sizes, serving fewer types of food, serving unplanned food, having difficulties adhering to nutrition standards, and had difficulties securing long-term funding and funding for their meal program. Basic service agencies were significantly associated with serving food on weekends and receiving specific funding. A fuller examination of these agency differences are discussed in the following discussion section.
Table 17. Univariate analysis of characteristics associated with basic and multi-service agencies (N = 290).

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Multi-service (60%)</th>
<th>Basic (40%)</th>
<th>Odds Ratio (95% confidence interval)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Service frequency</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Serving all year</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>131 (76.2)</td>
<td>53 (46.9)</td>
<td>3.67 (2.21-6.09)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>No</td>
<td>41 (23.8)</td>
<td>60 (53.1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Days every week</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≥5 days</td>
<td>90 (52%)</td>
<td>20 (18%)</td>
<td>4.58 (2.64-7.95)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>&lt;5 days</td>
<td>84 (48%)</td>
<td>93 (82%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Serving on a weekend</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>53 (30%)</td>
<td>48 (42%)</td>
<td>0.59 (0.36-0.98)</td>
<td>.041</td>
</tr>
<tr>
<td>No</td>
<td>122 (70%)</td>
<td>67 (58%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Resources</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Government funding</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>101 (58%)</td>
<td>10 (9%)</td>
<td>14.33 (7.01-29.28)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>No</td>
<td>74 (42%)</td>
<td>105 (91%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specific funding</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>68 (39%)</td>
<td>78 (68%)</td>
<td>0.30 (0.18-0.50)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>No</td>
<td>107 (61%)</td>
<td>37 (32%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paid staff</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>153 (93%)</td>
<td>41 (39%)</td>
<td>20.21 (9.98-40.94)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>No</td>
<td>12 (7%)</td>
<td>65 (61%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Security guards</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>54 (33%)</td>
<td>51 (47%)</td>
<td>0.56 (0.34-0.92)</td>
<td>0.022</td>
</tr>
<tr>
<td>No</td>
<td>110 (67%)</td>
<td>58 (53%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paid security guards</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>46 (85%)</td>
<td>15 (29%)</td>
<td>13.80 (5.27-36.13)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>No</td>
<td>8 (15%)</td>
<td>36 (71%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Affiliated with major distributor</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>129 (74%)</td>
<td>49 (43%)</td>
<td>3.78 (2.29-6.23)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>No</td>
<td>46 (26%)</td>
<td>66 (57%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Indications of strain</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cut portion sizes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>78 (48%)</td>
<td>32 (29%)</td>
<td>2.21 (1.32-3.69)</td>
<td>.002</td>
</tr>
<tr>
<td>No</td>
<td>86 (52%)</td>
<td>78 (71%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Serve fewer types of food</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>84 (52%)</td>
<td>34 (31%)</td>
<td>2.44 (1.47-4.05)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>No</td>
<td>78 (48%)</td>
<td>77 (69%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Serve unplanned food</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>96 (59%)</td>
<td>44 (40%)</td>
<td>2.18 (1.33-3.57)</td>
<td>.002</td>
</tr>
<tr>
<td>No</td>
<td>67 (41%)</td>
<td>67 (60%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Turn clients away/cut serving times</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>46 (29%)</td>
<td>22 (20%)</td>
<td>1.62 (0.91-2.88)</td>
<td>.103</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
<td>U</td>
<td>P</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>-------</td>
<td>------</td>
<td>------</td>
<td>------</td>
</tr>
<tr>
<td>Use nutrition standards</td>
<td>124 (74%)</td>
<td>44 (26%)</td>
<td>1.53 (0.91-2.57)</td>
<td>.111</td>
</tr>
<tr>
<td>Difficulties adhering to nutrition standards</td>
<td>50 (47%)</td>
<td>56 (53%)</td>
<td>3.49 (1.67-7.33)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Do program users need more food than program can provide</td>
<td>129 (84%)</td>
<td>24 (16%)</td>
<td>0.75 (0.36-1.58)</td>
<td>0.449</td>
</tr>
<tr>
<td>Difficulties funding long-term</td>
<td>111 (74%)</td>
<td>39 (26%)</td>
<td>3.91 (2.27-6.76)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Difficulties funding food costs</td>
<td>94 (65%)</td>
<td>50 (35%)</td>
<td>4.43 (2.48-7.93)</td>
<td>&lt;.001</td>
</tr>
</tbody>
</table>

**One year changes**

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>U</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Funding increase</td>
<td>38 (24%)</td>
<td>118 (76%)</td>
<td>0.85 (0.49-1.48)</td>
<td>.562</td>
</tr>
<tr>
<td>Amount of money spent on food per month</td>
<td>30 (19%)</td>
<td>81 (74%)</td>
<td>0.69 (0.38-1.24)</td>
<td>.212</td>
</tr>
<tr>
<td>Number of people served increase</td>
<td>51 (33%)</td>
<td>105 (67%)</td>
<td>0.95 (0.56-1.59)</td>
<td>.831</td>
</tr>
</tbody>
</table>

Missing data affect cell counts for some variables.

Odds of multi-service agencies being associated with a variety of agency characteristics compared to basic agencies.

It is worth noting, that a greater proportion of multi-service agencies established their meal programs earlier than basic service agencies (figure 4). From the graph, there is a noticeable increase in the origination of meal programs within both multi-service and basic service agencies after 1985.
Figure 4. Year of origin for meal programs between agencies providing basic versus multi-service agencies (n=290).

In terms of the total volume of meal provisioning during a week when all agencies were operating a meal program, multi-service agencies served 106,346 meals every week whereas basic service agencies only served 30,691 meals per week. However, when considering the intensity of meal services, basic service agencies served a significantly greater number of meals per day and per hour of service compared to multi-service agencies (Table 18).

Table 18. Summary of service provisioning among multi-service and basic service agencies (n=290).

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Mean</th>
<th>Median</th>
<th>Range</th>
<th>p-value¹</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Meals served per week</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multi-service (n=174)</td>
<td>607.69</td>
<td>195.00</td>
<td>8-14,725</td>
<td>.086</td>
</tr>
<tr>
<td>Basic (n=113)</td>
<td>266.88</td>
<td>115.00</td>
<td>10-1500</td>
<td></td>
</tr>
<tr>
<td><strong>Meals served per day</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multi-service (n=174)</td>
<td>122.04</td>
<td>50.00</td>
<td>7-2103.57</td>
<td>.002</td>
</tr>
<tr>
<td>Basic (n=113)</td>
<td>121.62</td>
<td>83.86</td>
<td>5-660</td>
<td></td>
</tr>
<tr>
<td><strong>Meals served per hour</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multi-service (n=174)</td>
<td>39.12</td>
<td>23.33</td>
<td>0.44-290.44</td>
<td>.001</td>
</tr>
<tr>
<td>Basic (n=113)</td>
<td>53.17</td>
<td>34.50</td>
<td>1.60-300</td>
<td></td>
</tr>
</tbody>
</table>

¹Test of significance: Wilcoxon-Mann-Whitney Test
Multi-service agencies served a greater volume of meals throughout the week compared to basic service agencies in all cities, with the exception of Halifax (Table 19). Basic service agencies in Victoria were responsible for more feeding on weekends compared to multi-service agencies. In Toronto, there was a more substantial reduction in the volume of meals served among multi-service agencies during the weekend compared to basic service agencies. Lastly, in Edmonton and Quebec City, multi-service agencies were predominantly responsible for the majority of feeding throughout the city.

Table 19. Summary of the volume of service provisioning between multi-service and basic support agencies (n=290).

<table>
<thead>
<tr>
<th>Days</th>
<th>Victoria</th>
<th>Edmonton</th>
<th>Toronto</th>
<th>Quebec City</th>
<th>Halifax</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Multi.(^2) Basic</td>
<td>Multi. Basic</td>
<td>Multi. Basic</td>
<td>Multi. Basic</td>
<td>Multi. Basic</td>
</tr>
<tr>
<td></td>
<td>N=13</td>
<td>N=15</td>
<td>N=29</td>
<td>N=14</td>
<td>N=92</td>
</tr>
<tr>
<td>Sunday</td>
<td>532</td>
<td>900</td>
<td>3237</td>
<td>250</td>
<td>4147</td>
</tr>
<tr>
<td>Monday</td>
<td>2160</td>
<td>635</td>
<td>4992</td>
<td>438</td>
<td>8461</td>
</tr>
<tr>
<td>Tuesday</td>
<td>2319</td>
<td>718</td>
<td>5052</td>
<td>693</td>
<td>8807</td>
</tr>
<tr>
<td>Wednesday</td>
<td>2276</td>
<td>640</td>
<td>5285</td>
<td>528</td>
<td>8912</td>
</tr>
<tr>
<td>Thursday</td>
<td>2336</td>
<td>690</td>
<td>5419</td>
<td>828</td>
<td>9348</td>
</tr>
<tr>
<td>Friday</td>
<td>2067</td>
<td>844</td>
<td>5439</td>
<td>388</td>
<td>8111</td>
</tr>
<tr>
<td>Saturday</td>
<td>504</td>
<td>845</td>
<td>3860</td>
<td>565</td>
<td>4988</td>
</tr>
<tr>
<td>Total</td>
<td>12194</td>
<td>5272</td>
<td>33284</td>
<td>3690</td>
<td>52774</td>
</tr>
</tbody>
</table>

\(^1\) Total volume of meals served during a week when all agencies were operating.
\(^2\) Multi. = Multi-service agencies

Considering there were several significant differences between multi-service and basic agencies with respect to program delivery, resources, staffing, volume, and frequency, we were interested in examining whether those characteristics were associated with either type of agency experiencing strain relating to program delivery. Multi-service and basic agencies were stratified because considering both types of agencies had distinct organization, management, and resource characteristics, this would afford us the opportunity to elucidate which program delivery strategies were positively associated with or protected either type of agency from experiencing strain. Variables that differed significantly from univariate results (Table 17) were included in
this analysis, as well as variables concerning the total volume of meals served, and year of program origin to discern whether those differences influenced an agency’s ability to experience strain. In addition, a composite score was created by summing the strain variables relating to program delivery (e.g., cutting portion sizes, serving fewer types of food, serving unplanned food, and/or turning clients away/cutting service times). The composite score ranged from a score of zero for agencies that experienced no strain, to a score of four for agencies that experienced all four types of strain. Within multi-service agencies, 36 (22%) agencies experienced no strain, 33 (20%) experienced one type of strain, 41 (25%) experienced two types of strain, 35 (21%) experienced three types of strain, and 21 (13%) experienced four types of strain. In contrast, within basic agencies, 46 (41%) experienced no strain, 22 (20%) experienced one type of strain, 25 (23%) experienced two types of strain, 12 (11%) experienced three types of strain, and 6 (5%) experienced all four types of strain.

Univariate results are displayed in Table 20 and Table 21. It was apparent that within multi-service agencies, serving year round, serving on a weekend, serving at least five days every week, hiring a paid staff member, increasing the proportion of food supplies from donations, and increasing the volume of meals served per week, day, and serving time were positively associated with experiencing various indications of strain. On the other hand, being affiliated with a major distributor, receiving a greater proportion of food supplies from donations, and increasing the volume of service per week were positively associated with experiencing various indications of strain within basic agencies. It was interesting to note that being affiliated with a major distributor reduced the probability of turning clients away or cutting serving times among basic agencies. Evidently, the total volume of meal provisioning and the
overall frequency of service were most likely to increase the probability of an agency experiencing strain within both basic and multi-service agencies.

Table 20. Program characteristics associated with a multi-service agency experiencing strain relating to program delivery (n=175).

<table>
<thead>
<tr>
<th>Variables</th>
<th>Cut portion sizes</th>
<th>Serve fewer types of food</th>
<th>Serve unplanned food</th>
<th>Turn people away/cutting serving time</th>
<th>Composite score¹</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serving all year</td>
<td><strong>2.29 (1.08-4.84)</strong></td>
<td><strong>2.58 (1.21-5.50)</strong></td>
<td><strong>3.01 (1.43-6.34)</strong></td>
<td>0.74 (0.34-1.61)</td>
<td><strong>2.88 (1.50-5.53)</strong></td>
</tr>
<tr>
<td>Serving on weekend</td>
<td>0.87 (0.45-1.68)</td>
<td>0.95 (0.49-1.85)</td>
<td>1.32 (0.67-2.61)</td>
<td>0.92 (0.44-1.93)</td>
<td>1.03 (0.58-1.85)</td>
</tr>
<tr>
<td>Serving ≥5 days/week</td>
<td>0.96 (0.52-1.78)</td>
<td><strong>1.90 (1.02-3.55)</strong></td>
<td>1.20 (0.64-2.24)</td>
<td>0.80 (0.40-1.58)</td>
<td>1.25 (0.73-2.14)</td>
</tr>
<tr>
<td>Receiving government funding</td>
<td>1.33 (0.71-2.48)</td>
<td>1.32 (0.71-2.48)</td>
<td>1.12 (0.59-2.10)</td>
<td>1.24 (0.62-2.49)</td>
<td>1.36 (0.79-2.36)</td>
</tr>
<tr>
<td>Receiving specific funding</td>
<td>0.68 (0.36-1.29)</td>
<td>1.10 (0.58-2.09)</td>
<td>0.86 (0.45-1.65)</td>
<td>1.23 (0.61-2.50)</td>
<td>0.93 (0.53-1.63)</td>
</tr>
<tr>
<td>Presence of paid staff</td>
<td>2.37 (0.79-7.05)</td>
<td><strong>3.64 (1.12-11.81)</strong></td>
<td>1.49 (0.53-4.20)</td>
<td>0.87 (0.28-2.65)</td>
<td><strong>2.72 (1.12-6.65)</strong></td>
</tr>
<tr>
<td>Presence of security guards</td>
<td>1.74 (0.89-3.39)</td>
<td>0.77 (0.39-1.49)</td>
<td>1.52 (0.77-3.00)</td>
<td>1.10 (0.53-2.28)</td>
<td>1.29 (0.72-2.31)</td>
</tr>
<tr>
<td>Number of volunteers²</td>
<td>1.10 (0.84-1.44)</td>
<td>0.86 (0.65-1.14)</td>
<td>1.07 (0.81-1.41)</td>
<td>0.92 (0.66-1.28)</td>
<td>0.98 (0.78-1.02)</td>
</tr>
<tr>
<td>Affiliated with a major distributor</td>
<td>1.67 (0.79-3.53)</td>
<td>1.36 (0.65-2.84)</td>
<td>0.92 (0.44-1.92)</td>
<td>1.05 (0.46-2.40)</td>
<td>1.36 (0.73-2.53)</td>
</tr>
<tr>
<td>Year of origin²</td>
<td>1.08 (0.96-1.22)</td>
<td>1.09 (0.97-1.22)</td>
<td>0.98 (0.88-1.10)</td>
<td>1.09 (0.94-1.27)</td>
<td>1.07 (0.97-1.17)</td>
</tr>
<tr>
<td>Proportion of food from donations²</td>
<td>1.03 (0.94-1.13)</td>
<td>1.10 (0.997-1.20)</td>
<td>0.96 (0.87-1.05)</td>
<td>0.96 (0.87-1.07)</td>
<td>1.02 (0.94-1.11)</td>
</tr>
<tr>
<td>Meals served per week³</td>
<td>1.28 (0.77-2.12)</td>
<td>1.13 (0.68-1.88)</td>
<td><strong>1.93 (1.11-3.34)</strong></td>
<td>0.97 (0.54-1.74)</td>
<td>1.46 (0.93-2.28)</td>
</tr>
<tr>
<td>Meals served per day³</td>
<td>1.18 (0.62-2.25)</td>
<td>0.69 (0.36-1.33)</td>
<td><strong>2.03 (1.01-4.07)</strong></td>
<td>0.97 (0.46-2.04)</td>
<td>1.26 (0.71-2.22)</td>
</tr>
<tr>
<td>Average number of service times/day of operation</td>
<td>1.26 (0.88-1.82)</td>
<td>0.95 (0.67-1.36)</td>
<td><strong>1.52 (1.01-2.30)</strong></td>
<td>0.98 (0.65-1.48)</td>
<td>1.21 (0.88-1.66)</td>
</tr>
</tbody>
</table>

Bolded items represent a statistical significant level of p<0.05.
¹Composite score is the total number of strain variables experienced by each agency. Summed variables include: cutting portion sizes, serving fewer types of food, serving unplanned food, and/or turning clients away/cutting service times.
²Variables have been scaled to measure changes in 10 unit increments.
³Variables have been log transformed.
Table 21. Program characteristics associated with a basic agency experiencing strain relating to program delivery (n=115).

<table>
<thead>
<tr>
<th>Variables</th>
<th>Cut portion sizes</th>
<th>Serve fewer types of food</th>
<th>Serve unplanned food</th>
<th>Turn people away/cutting serving time</th>
<th>Composite Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serving all year</td>
<td>0.57 (0.25-1.32)</td>
<td>0.85 (0.38-1.92)</td>
<td>0.78 (0.36-1.68)</td>
<td>0.93 (0.37-2.38)</td>
<td>0.66 (0.34-1.31)</td>
</tr>
<tr>
<td>Serving on weekend</td>
<td>0.78 (0.33-1.81)</td>
<td>1.39 (0.62-3.14)</td>
<td>1.13 (0.52-2.43)</td>
<td>0.46 (0.16-1.28)</td>
<td>0.98 (0.49-1.95)</td>
</tr>
<tr>
<td>Serving ≥5 days/week</td>
<td>0.32 (0.09-1.17)</td>
<td>1.39 (0.52-3.70)</td>
<td>1.70 (0.66-4.34)</td>
<td>0.88 (0.26-2.91)</td>
<td>0.99 (0.43-2.32)</td>
</tr>
<tr>
<td>Receiving government funding</td>
<td>2.70 (0.73-10.08)</td>
<td>2.48 (0.67-9.22)</td>
<td>2.49 (0.66-9.38)</td>
<td>0.42 (0.05-3.53)</td>
<td>2.38 (0.74-7.65)</td>
</tr>
<tr>
<td>Receiving specific funding</td>
<td>1.61 (0.61-4.26)</td>
<td>1.50 (0.59-3.80)</td>
<td>0.94 (0.41-2.23)</td>
<td>0.84 (0.31-2.32)</td>
<td>1.27 (0.59-2.72)</td>
</tr>
<tr>
<td>Presence of paid staff</td>
<td>0.94 (0.39-2.22)</td>
<td>1.21 (0.53-2.81)</td>
<td>2.11 (0.95-4.67)</td>
<td>1.07 (0.40-2.83)</td>
<td>1.30 (0.64-2.63)</td>
</tr>
<tr>
<td>Presence of security guards</td>
<td>1.97 (0.84-4.59)</td>
<td>1.21 (0.53-2.76)</td>
<td>1.58 (0.72-3.43)</td>
<td>0.59 (0.22-1.54)</td>
<td>1.37 (0.69-2.74)</td>
</tr>
<tr>
<td>Number of volunteers</td>
<td>1.04 (0.83-1.30)</td>
<td>1.03 (0.83-1.28)</td>
<td>1.09 (0.88-1.34)</td>
<td>0.98 (0.74-1.29)</td>
<td>1.06 (0.88-1.28)</td>
</tr>
<tr>
<td>Affiliated with a major distributor</td>
<td>1.14 (0.50-2.61)</td>
<td>1.19 (0.53-2.67)</td>
<td>1.73 (0.80-3.73)</td>
<td>0.30 (0.10-0.89)</td>
<td>1.06 (0.53-2.09)</td>
</tr>
<tr>
<td>Year of origin</td>
<td>1.04 (0.85-1.27)</td>
<td>0.97 (0.81-1.15)</td>
<td>0.88 (0.73-1.06)</td>
<td>1.06 (0.81-1.38)</td>
<td>0.96 (0.83-1.11)</td>
</tr>
<tr>
<td>Proportion of food from donations</td>
<td>0.91 (0.81-1.01)</td>
<td>0.97 (0.87-1.08)</td>
<td>1.00 (0.90-1.11)</td>
<td>0.90 (0.79-1.03)</td>
<td>0.95 (0.87-1.04)</td>
</tr>
<tr>
<td>Meals served per week</td>
<td>0.91 (0.40-2.11)</td>
<td>2.88 (1.21-6.85)</td>
<td>3.27 (1.41-7.57)</td>
<td>0.79 (0.29-2.20)</td>
<td>2.09 (1.03-4.24)</td>
</tr>
<tr>
<td>Meals served per day</td>
<td>1.68 (0.57-4.90)</td>
<td>2.65 (0.88-7.96)</td>
<td>2.63 (0.93-7.41)</td>
<td>0.79 (0.23-2.76)</td>
<td>2.31 (0.94-5.65)</td>
</tr>
<tr>
<td>Average number of service times/day of operation</td>
<td>1.22 (0.68-2.20)</td>
<td>0.59 (0.27-1.29)</td>
<td>0.98 (0.55-1.73)</td>
<td>0.44 (0.13-1.47)</td>
<td>0.92 (0.55-1.54)</td>
</tr>
</tbody>
</table>

Bolded items represent a statistical significant level of p<0.05.

1Composite score is the total number of strain variables experienced by each agency. Summated variables include: cutting portion sizes, serving fewer types of food, serving unplanned food, and/or turning clients away/cutting service times.

2Variables have been scaled to measure changes in 10 unit increments.

3Variables have been log transformed.

Characteristics relating to program delivery and the organization of agencies were also associated with the probability of agencies having nutrition standards (table 22). Univariate analyses were used to evaluate associations. Within multi-service agencies, serving on the weekend and having paid staff was positively associated with having nutrition standards.
whereas receiving a greater proportion of the total food supply from donations was negatively associated with using nutrition standards. In contrast, within basic agencies, having an affiliation with a major distributor, receiving a greater proportion of meals from donations, and serving a greater volume of meals every week were negatively related to having nutrition standards. It should be noted that when examining only agencies that had nutrition standards, there were no significant relationships with agency organization characteristics and the likelihood of an agency being able to adhere to the standards that they have created. Overall, it appeared that having a greater reliance on donations was negatively associated with an agency having nutrition standards to help organize their meal services within both multi-service and basic agencies.

Table 22. Univariate analysis examining characteristics relating to program delivery and having nutrition standards (n=290).

<table>
<thead>
<tr>
<th>Variables</th>
<th>Multi-service agencies</th>
<th>Basic agencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serving all year</td>
<td>1.66 (0.77-3.57)</td>
<td>0.65 (0.30-1.41)</td>
</tr>
<tr>
<td>Serving on weekend</td>
<td>2.91 (1.20-7.06)</td>
<td>1.28 (0.58-2.84)</td>
</tr>
<tr>
<td>Serving ≥5 days/week</td>
<td>0.83 (0.42-1.66)</td>
<td>0.50 (0.18-1.18)</td>
</tr>
<tr>
<td>Receiving government funding</td>
<td>1.58 (0.79-3.17)</td>
<td>1.29 (0.32-5.31)</td>
</tr>
<tr>
<td>Receiving specific funding</td>
<td>1.59 (0.75-3.37)</td>
<td>1.80 (0.75-4.29)</td>
</tr>
<tr>
<td>Presence of paid staff</td>
<td>2.93 (1.10-7.79)</td>
<td>0.85 (0.38-1.91)</td>
</tr>
<tr>
<td>Presence of security guards</td>
<td>1.54 (0.70-3.37)</td>
<td>0.73 (0.33-1.64)</td>
</tr>
<tr>
<td>Number of volunteers</td>
<td>1.04 (0.77-1.41)</td>
<td>1.17 (0.92-1.50)</td>
</tr>
<tr>
<td>Affiliated with a major distributor</td>
<td>0.44 (0.17-1.12)</td>
<td>0.33 (0.15-0.75)</td>
</tr>
<tr>
<td>Year of origin</td>
<td>1.06 (0.94-1.19)</td>
<td>1.03 (0.87-1.21)</td>
</tr>
<tr>
<td>Proportion of food from donations</td>
<td>0.83 (0.74-0.93)</td>
<td>0.87 (0.78-0.97)</td>
</tr>
<tr>
<td>Meals served per week</td>
<td>1.20 (0.70-2.07)</td>
<td>0.45 (0.20-1.01)</td>
</tr>
<tr>
<td>Meals served per day</td>
<td>1.20 (0.59-2.43)</td>
<td>0.48 (0.17-1.33)</td>
</tr>
<tr>
<td>Average number of service times/day of operation</td>
<td>1.38 (0.88-2.15)</td>
<td>0.73 (0.41-1.30)</td>
</tr>
</tbody>
</table>

Bolded items represent a statistical significant level of p<0.05.
1Variables have been scaled to measure changes in 10 unit increments.
2Variables have been log transformed.

6.2 Relationship between the volume of service provisioning and characteristics associated with program delivery

It was important to critically evaluate whether characteristics associated with program delivery enabled or restricted an agency from serving a large volume of meals. An ANOVA
A model was used to test differences between agencies where the dependent variable was the log transformed volume of meals served per day of service. Independent variables in the model included: whether an agency was multi-service or basic, had an affiliation with a major distributor, served on weekends, served year-round, served at least five days per week, and examined the average number of service times offered each week. A multivariate model was then prepared whereby variables that were associated with the volume of meals served per day of service (p < 0.05) in univariate analyses were included in the multivariate model (Table 23; Table 24).

Interestingly, in multivariate analyses, basic agencies, agencies serving on weekends, having a greater average number of service times per day were all positively associated with serving a greater volume of meals per day of service (Table 23). Considering basic agencies were more likely to be serving on weekends, we hypothesized that there would be a compensatory effect between multi-service and basic agencies whereby basic agencies would be filling a void in multi-service agency services which primarily served meals during the week. However, although there was a significant association when examining the interaction between weekend service and agency type (p=0.006), multi-service agencies that served during the weekend served more meals on average compared to basic agencies that served during the weekend. This ultimately suggested that although basic services were more likely to be serving on weekends, they were not necessarily compensating for the lack of meal provisioning provided by multi-service agencies.

In addition, we examined the total number of agencies that offered services throughout the week and during the weekend to determine whether those agencies increased their service provisioning during the weekend to compensate for the reduced volume of meals that were
typically served within each community on a Saturday and Sunday. In total, there were 72 agencies that served throughout the week and on the weekend, of which 47 (65%) were multi-service agencies, and 25 (35%) were basic agencies. Overall, only twelve of those agencies increased their service provisioning during weekends whereas the remaining agencies provided the same volume of meal provisioning or decreased the total volume of meals served on a Saturday or a Sunday. Overall, these findings indicated that only a small fraction of agencies serving throughout the week and during a weekend increased their services to potentially compensate for the reduced volume of meals served during the weekend serving periods.

Table 23. Multivariate analysis of agency characteristics related to the volume of meals per day of service\(^1\) (N=290).

<table>
<thead>
<tr>
<th></th>
<th>Estimate</th>
<th>Standard error</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multi-service/Basic</td>
<td>-0.13</td>
<td>0.05</td>
<td>0.013</td>
</tr>
<tr>
<td>Major distributor</td>
<td>0.02</td>
<td>0.05</td>
<td>0.678</td>
</tr>
<tr>
<td>Weekend</td>
<td>0.29</td>
<td>0.05</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Average # of serving times/day</td>
<td>0.23</td>
<td>0.03</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Serving all year</td>
<td>-0.05</td>
<td>0.05</td>
<td>0.375</td>
</tr>
<tr>
<td>Serving at least 5 days/week</td>
<td>0.12</td>
<td>0.05</td>
<td>0.025</td>
</tr>
</tbody>
</table>

Test of significance used: ANOVA.\(^1\)The dependent variable, meals per day of service, was log transformed.

Table 24. Multivariate analysis examining the relationship between agency characteristics and the volume of meals served per day of service\(^1\) (N=290).

<table>
<thead>
<tr>
<th></th>
<th>Estimate</th>
<th>Standard error</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multi-service/Basic</td>
<td>-0.17</td>
<td>0.05</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Weekend</td>
<td>0.19</td>
<td>0.05</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Average # of serving times/day</td>
<td>0.22</td>
<td>0.03</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Serving at least 5 days/week</td>
<td>0.01</td>
<td>0.05</td>
<td>0.798</td>
</tr>
</tbody>
</table>

Test of significance used: ANOVA.\(^1\)Dependent variable was log transformed.
6.3 Discussion

From studying the results, multi-service agencies were more likely than basic service agencies to serve year-round and serve at least five days every week. These findings suggest that multi-service agencies provided more comprehensive daily services year-round whereas basic services were more likely to restrict their meal provisioning to specific months throughout the year. In addition, multi-service agencies were more likely than basic agencies to receive government funding and hire paid staff members. Although multi-service agencies were more likely to receive government support (Human Resources and Skills Development Canada, 2011), frequent service operation and the management of multiple poverty-reduction services likely required additional resources and paid staff members to coordinate and operate the agency compared to basic service agencies, which served less frequently and were less reliant on paid staff.

It was also of interest to note that although multi-service agencies served more meals every week compared to basic service agencies, basic service agencies served a greater number of meals by day of service and per hour of operation. This is likely due to the fact that multi-service agencies served more frequently but served fewer meals during each serving time. In comparison, although basic service agencies did not serve as frequently, they served a greater volume of food when they were offering a meal service.

Considering basic agencies served more intensely than multi-service agencies, it was interesting to note that basic agencies were also more likely to have security guards assisting with service delivery. As identified in section 5.4, having security guards was related to serving a greater volume of food in some cities, which suggested that basic agencies required increased security support to manage their meal program during periods of intensive meal provisioning.
However, multi-service agencies were more likely than basic agencies to hire paid security guards. This was likely due to the fact that multi-service agencies were more likely than basic agencies to receive government funding for their agency, which enabled them to hire a variety of paid staff members to support their services.

Our research from section 5.2 indicated that there was a haphazard patterning of service provisioning throughout the week where most meals were served during the middle of the week and fewer meals were served on weekends. Thus, it was noteworthy that although multi-service agencies served more frequently, basic service agencies were more likely to be serving meals during the weekend. These results suggest that although multi-service agencies provided more frequent services and a greater overall volume of food, basic service agencies appeared to be filling a gap in meal services and were an integral component of the system of feeding occurring within each community.

The findings of this analysis suggest that although multi-service agencies operated their services more frequently, were more likely to receive financial support the government and food supplies from major distributors compared to basic agencies, they were not necessarily better able to manage their supplies with the demand for food. More specifically, multi-service agencies were significantly more likely to cut portion sizes, serve fewer types of food, serve unplanned food, had more difficulties adhering to their nutrition standards, securing long-term funding, and securing funding for their food program compared to basic service agencies. Given the structure and nature of operating multiple services, and being heavily reliant on donated food supplies from major distributors, multi-service agencies appeared to have difficulties balancing the demand for food with a potentially inadequate resource supply. One potential implication of operating larger meal programs while managing a variety of other social services was that multi-
service agencies had to evenly distribute their financial support amongst all programs. The operation of multiple programs may have reduced the allocation of specific funds for meal programs, resulting in meal services becoming increasingly reliant on potentially inadequate donated food supplies and increasing their susceptibility to strain.

Contrastingly, basic service agencies served a greater volume of food per day of service and per hour of operation and were less likely to experience indications of strain. This may be due to basic service agencies operating less frequently and serving fewer meals every week compared to multi-service agencies, but may also speak to the fact that basic service agencies were more likely receiving specific funding and therefore, able to dedicate the majority of their resource supply to support and operate their meal service.

As identified in 6.1, there were no discernable significant temporal differences between multi-service and basic agencies. These findings indicated that there was no predictable movement with respect to growth or service between these two types of agencies and suggested that program delivery may have reached a steady-state of meal provisioning. Despite the fact that multi-service agencies were serving a greater number of people, it appeared that this was also the case from the year before. Overall, these results suggest that there were no changes between multi-service and basic agencies with respect the amount of funding received, amount of money spent on food, and the number of people served over the past year.

Although there was no compensatory effect between basic and multi-service agencies during the weekends, our results suggested that agencies serving more frequently throughout the week and agencies that served on weekends were also more likely to be serving a greater volume of meals per day of service provisioning. A potential explanation for this observation may relate to the fact that agencies providing frequent service throughout the week and during the weekend
had recognized the constant and pressing need for nutritional support from populations experiencing food insecurity. In response, these agencies increased the volume of meal provisioning on a daily basis to address these issues within communities.

In summary, the majority of meal provisioning in all five cities was provided in the context of agencies providing multiple services for hungry and impoverished populations. While this may be a beneficial consequence of recent public policy recommendations which have supported comprehensive services for the poor and homeless, multi-service agencies were less likely to have dedicated funding for meal services. One potential by-product of having less dedicated funding and being responsible for the majority of service provisioning, was that multi-service agencies appeared to have a limited capacity to balance the supply and demand for meals within their programs, and many were sometimes or often forced to modify their service delivery and reduce the nutritional adequacy of the meals being provided.
Chapter 7 - Responsiveness - System perspective

This section provides a comparative perspective on agency responsiveness by describing agencies as an overall system of charitable-based meal programs designed to address hunger in a community. More specifically, we conducted a comparative analysis between systems of agencies operating in each city in order to draw inferences relating to the adequacy and responsiveness of the overall system of meal provisioning occurring within each community. This section considers 1) service provisioning as it relates to the number of individuals experiencing severe food insecurity and 2) the adequacy of the meals being served in a community. The purpose of this section is to gain insight into the potential for an entire network of agencies operating within each community to respond to the unmet food needs of individuals.

7.1 Adequacy of meal provisioning occurring within each community

In order to examine the nutritional adequacy of meals from the perspective of the total system of feeding occurring within each community, we examined 1) the proportion of meals being served by agencies that reported having difficulties managing demand for food with their resource supply and 2) the proportion of meals being served by agencies that were able to adhere to nutrition standards. By evaluating the total proportion of meals being served within a community, we were able to move beyond an analysis of individual agencies and provide a discussion of the total system of meal provisioning occurring within each city.

Meals being served by agencies experiencing strain suggested that agencies had difficulties responding to the unmet food needs of their clientele and were forced to modify their services. To determine the proportion of meals being served by agencies experiencing strain, we created an index, similar to chapter 6, whereby an agency was considered to be having
difficulties managing the demand for food if they reported cutting portion sizes, serving fewer types of food, or serving unplanned food. However, the difference between this analysis and the analysis in chapter 6 was that we considered experiences of strain relating to service delivery during a period when the agency was serving food and compared differences between cities where the outcome variable was weighted for the total volume of meals served per week by each agency. Until this section, all meals served within a community were considered equal to one another, but weighting the outcome variable by the total volume of meals served on a weekly basis by each agency offered some insight into the total proportion of meals being served within each community by agencies experiencing various indications of strain. Thus, in order to perform this analysis, a series of logistic regression analyses were performed where the outcome was whether an agency experienced strain.

This analysis revealed that 95% of meals being served in Edmonton, 87% in Quebec City, 83% in Toronto, 60% in Halifax, and 41% of meals in Victoria were served by agencies experiencing strain (Table 25). Differences between cities remained significantly different from one another when adjusting for agencies that had an affiliation with a major distributor, whether the agency was multi-service or basic, and the interaction between major distributor affiliations and if an agency was multi-service or basic (Table 25). Ultimately, the proportion of meals being served by agencies experiencing strain in each community was extremely variable and reflected the fragility of community meal program’s ability to respond to populations experiencing food insecurity.
Table 25. Odds ratio comparison between cities based on the proportion of meals that are served by agencies experiencing strain (N= 290).

<table>
<thead>
<tr>
<th>City</th>
<th>Proportion of meals that are served by an agency experiencing strain (%, n)</th>
<th>Proportion of meals served that are served by an agency that did not experience strain (%, n)</th>
<th>Odds ratio (95% confidence interval)</th>
<th>Adjusted odds ratio (95% confidence interval)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toronto</td>
<td>83% (55211)</td>
<td>17% (11027)</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>Victoria</td>
<td>41% (7037)</td>
<td>59% (9991)</td>
<td>0.14 (0.14-0.15)</td>
<td>0.13 (0.13-0.14)</td>
</tr>
<tr>
<td>Edmonton</td>
<td>95% (34804)</td>
<td>5% (1911)</td>
<td>3.64 (3.46-3.83)</td>
<td>3.75 (3.56-3.94)</td>
</tr>
<tr>
<td>Quebec City</td>
<td>87% (7518)</td>
<td>13% (1098)</td>
<td>1.37 (1.28-1.46)</td>
<td>1.33 (1.24-1.42)</td>
</tr>
<tr>
<td>Halifax</td>
<td>60% (3614)</td>
<td>40% (2364)</td>
<td>0.31 (0.29-0.32)</td>
<td>0.34 (0.32-0.36)</td>
</tr>
</tbody>
</table>

1 Dependent variable (experiencing strain) was weighted for the total number of meals served per week by each agency
2 Adjusted for having an affiliation with a major distributor, if the agency was multi-service or basic, and an interaction term between major distributor affiliations and if an agency was multi-service or basic.
3 14 agencies were removed because of missing data.

It should be noted that the interaction term between major distributor affiliations and the type of agency was also significant, which required us to stratify by multi-service and basic agencies to further explore this relationship. In fact, as illustrated in Table 26, major distributor affiliations protected multi-service agencies from experiencing strain but were associated with strain within basic agencies. However, there were also agency differences between cities, whereby multi-service agencies in Victoria and Quebec City were less likely than Toronto agencies to experience strain, whereas agencies in Edmonton were more likely to experience strain. Conversely, basic agencies in Victoria, Edmonton, and Quebec City were more likely than Toronto agencies to experience strain, whereas agencies in Halifax were less likely to experience strain. These results suggest that the role of major distributors had an opposite effect within basic and multi-service agencies and the probability of an agency experiencing strain. Moreover, the relationship between multi-service and basic agencies and experiencing strain depended upon the city in which that agency was located. This finding suggested that the role of agencies and the ability for agencies to balance their resources with the demand for food differed between communities.
### Table 26. Odds of multi-service and basic agencies in different cities experiencing any strain (N=290).

<table>
<thead>
<tr>
<th>City</th>
<th><strong>Multi-service agencies</strong></th>
<th><strong>Basic agencies</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Odds ratio (95% confidence interval)(^1,2)</td>
<td>Odds ratio (95% confidence interval)(^1,2)</td>
</tr>
<tr>
<td>Toronto</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>Victoria</td>
<td>0.05 (0.04-0.05)</td>
<td>1.44 (1.34-1.56)</td>
</tr>
<tr>
<td>Edmonton</td>
<td>3.74 (3.53-3.97)</td>
<td>2.40 (2.16-2.66)</td>
</tr>
<tr>
<td>Quebec City</td>
<td>0.63 (0.58-0.67)</td>
<td>55.66 (33.44-92.66)</td>
</tr>
<tr>
<td>Halifax</td>
<td>1.12 (0.99-1.25)</td>
<td>0.23 (0.21-0.24)</td>
</tr>
<tr>
<td>Affiliated with a major distributor</td>
<td>0.25 (0.24-0.27)</td>
<td>2.88 (2.71-3.07)</td>
</tr>
</tbody>
</table>

\(^1\)Toronto was used as the reference category.
\(^2\) Dependent variable (experiencing any strain - cutting portion sizes, serving fewer types of food, and/or serving unplanned food). Odds ratio derived from logistic regression model weighted for the number of meals served per week by each agency.
\(^3\) 14 agencies were removed because of missing data.

Considering the majority of meals in most communities were served by agencies experiencing strain, it was interesting to examine how this affected the pattern of service provisioning throughout the week. From figure 5, it was apparent that most meals were served by agencies experiencing strain throughout the entire week with the exception of Victoria.

However, despite the fact that most meals in Victoria were served by agencies not experiencing strain from Monday-Friday, the majority of meals served on weekends were provided by agencies reporting strain. These results suggested that the total proportion of meals served by agencies experiencing strain dramatically affects the responsiveness of service provisioning throughout the week and especially during weekends.
Figure 5. Proportion of meals served on each day throughout the week that were served by agencies that did and did not experience strain in each city (n=290).

Legend: Moving from left to right, each column represents a different day (Sunday-Saturday). Dark grey bars represent the proportion of meals being served by agencies that did not experience strain and light bars represent the proportion of meals that were served by agencies that did experience strain in each city.

1 14 agencies were removed because of missing data.

As indicated in section 5.6.2, although we did not analyze the nutritional quality of the meals being served by agencies, many agencies reported having difficulties adhering to the nutritional standards that they had created for their meal program. Therefore, we were interested in investigating the total proportion of meals being served by agencies in each community that were able to adhere to nutrition standards. The analytic approach used to test differences between cities was a series of logistic regression analyses where the dependent variable was whether an agency could adhere to nutrition standards. We compared differences between cities where the outcome variable was weighted for the total volume of meals served per week by each agency. From our results, it was apparent that 83% of meals being served in Victoria, 70% in Edmonton, 41% in Quebec City, 31% in Toronto, and 25% of meals were in Halifax adhered to
nutritional standards (Table 27). These proportions remained statistically different from one another when adjusting for agencies that had an affiliation with a major distributor, and if the agency was multi-service or basic. These results suggest that the majority of meals served in Victoria and Edmonton were able to adhere to whatever nutritional standards they had set for themselves, whereas in Toronto, Quebec City, and Halifax, most meals were served by agencies that were unable to adhere to their meal programs’ nutritional standards.

Table 27. Comparison of the proportion of meals that adhered to nutrition standards across cities (N=290).

<table>
<thead>
<tr>
<th></th>
<th>Proportion of meals served that adhere to standards (% , n)</th>
<th>Proportion of meals served that do not adhere to standards (%, n)</th>
<th>Odds ratio (95% confidence interval) (^1)</th>
<th>Adjusted odds ratio (95% confidence interval) (^2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toronto</td>
<td>31% (18381)</td>
<td>69% (41787)</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Victoria</td>
<td>83% (14024)</td>
<td>17% (2809)</td>
<td>11.35 (10.86-11.86)</td>
<td>11.30 (10.81-11.82)</td>
</tr>
<tr>
<td>Edmonton</td>
<td>70% (24743)</td>
<td>30% (10597)</td>
<td>5.31 (5.16-5.46)</td>
<td>5.34 (5.18-5.49)</td>
</tr>
<tr>
<td>Quebec City</td>
<td>41% (3539)</td>
<td>59% (5092)</td>
<td>1.58 (1.51-1.66)</td>
<td>1.57 (1.50-1.65)</td>
</tr>
<tr>
<td>Halifax</td>
<td>25% (1266)</td>
<td>75% (3895)</td>
<td>0.74 (0.69-0.79)</td>
<td>0.73 (0.68-0.78)</td>
</tr>
</tbody>
</table>

\(^1\)Dependent variable (adhering to nutrition standards).
\(^2\)Adjusted for having an affiliation with a major distributor and if the agency was multi-service or basic.
Odds ratio derived from logistic regression model weighted for the number of meals served per week by each agency.

When considering the relationship between the total volume of meals being served by agencies that adhered to nutritional standards with service patterns throughout the week, it was apparent that the majority of meals in all cities were served from a Monday to a Friday with a paucity of meal provisioning during the weekend. In addition, most meals served by agencies not adhering to standards in Toronto, Quebec City, and Halifax severely affected meal provisioning throughout the week (figure 6). On the other hand, most meals in Edmonton and Victoria were served by agencies that adhered to nutritional standards, suggesting that agencies within those communities may have been able to provide more responsive services to address the nutritional vulnerability of the populations they were serving.

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Figure 6. Proportion of meals served on each day throughout the week that adhered to and did not adhere to nutrition standards in each city throughout the week (n=290).

Legend: Moving from left to right, each column represents a different day (Sunday-Saturday). Dark grey bars represent the proportion of meals being served that adhered to nutrition standards and light grey bars represent the proportion of meals that were not adhering to nutrition standards in each city.

14 agencies were removed because of missing data.

7.2 Relationship between the volume service provisioning and feeding homeless and food insecure populations

Although there was an extremely large volume of meals being served across all five cities, there were also extreme variations with respect to the volume meal provisioning throughout the week and during different serving times. Thus, it was important to investigate if the total meal provisioning offered by community-based meal services were able to respond to the unmet food needs of individuals experiencing food insecurity. In order to investigate this question from the perspective of a system of meal services responding to unmet food need within
each city, we examined the relationship between the reported numbers of homeless individuals residing in each city. Recent studies have suggested that homeless individuals are at the extreme end of the continuum from the perspective of nutritional vulnerability thus, this population served as a reasonable proxy to compare the total volume of meal provisioning to the unmet food needs in each community (Bunston & Breton, 1990; Dachner & Tarasuk, 2002; Hwang & Bugeja, 2004).

From our findings, program directors reported that on average 27% of agency clientele in Victoria, 40% in Edmonton, 33% in Toronto, 19% in Quebec City, and 29% of clientele accessing services in Halifax were homeless. These results reflect responses from agency program directors estimating the total proportion of homeless individuals who had accessed their meal program on a daily basis. Our study defined homeless individuals as “people who were sleeping in a temporary shelter, indoor or outdoor private or public space, or someone else’s place, because they had no place of their own”. From Canadian Homelessness Research Network’s (2012) recent stratification of homelessness, our definition encompasses unsheltered, emergency sheltered, and provisionally sheltered homeless populations. Although our data encompassed several typologies of homeless individuals, these results confirm that many agencies in Canadian were responding to homeless populations.

7.2.1 Homeless population comparison

When examining the relationship between the volume of service and the reported number of homeless individuals in each city, it was difficult to draw comparisons because some homeless estimates often included individuals who were residing in shelters while our database excluded agencies that operated a shelter (see Appendix and footnotes in Table 28). In addition, each city utilized a different data collection method to estimate their homeless population, which
made it difficult to evaluate differences between communities. However, although the comparison had certain limitations, this analysis provided an indication of the capacity for agencies to respond to the unmet food needs of individuals experiencing food insecurity.

We compared the total number of people that could potentially receive three meals every day from meal services between each community to determine if one city was better equipped to manage the total demand for food. In order to determine the total number of people that could be served three meals per day, we considered the service period throughout the day when the fewest meals were served. A volume limiting service time referred to a service period when the fewest number of meals were being served in a community. For example, in Toronto on a Sunday, there were 1596 meals served during breakfast, 3500 meals served during lunch, and 1412 meals served during dinner. Thus, the volume limiting service time occurred during dinner hours, or during the time when the fewest meals were served. A worst case scenario occurred during the day when the fewest meals were served during the volume limiting service time and a best case scenario occurred when the greatest number of meals were served during the volume limiting service time. For example, the worst case scenario in Toronto occurred during a Sunday when only 1305 people were served meals during the dinner serving time which equated to a maximum of 1305 people being able to receive 3 meals per day.

It should be noted that estimates in all cities collected information from individuals residing in shelters, which suggested there were individuals included in these estimates who were receiving meals from the shelters where they were residing (see Appendix). Thus, we only evaluated Edmonton and Toronto where they stratified their sample to report the total number emergency sheltered homeless people and the total number of unsheltered homeless individuals. It should also be noted that the head count in Edmonton was conducted in October throughout
the entire day with temperatures ranging from 7-16 degrees Celsius, whereas the head count in Toronto was conducted in April during the evening hours with an average temperature of 9 degrees Celsius (Edmonton, 2012; Street Needs Assessment, 2009). Thus, the ability to compare the total number of unsheltered homeless in each community was limited by the fact that the head counts were conducted at different times, which may have influenced the number of homeless people who were visible on the streets. Our findings suggest that both Edmonton and Toronto were able to feed their entire unsheltered homeless population during their best case scenarios which occurred on Wednesdays, however; Edmonton was only able to serve 81% of their unsheltered homeless population during a worst case scenario (Saturday or Sunday). On the other hand, Toronto was able to serve their entire unsheltered homeless population during their worst case scenario as well (Sunday).

Table 28. Number of unsheltered homeless people who can receive 3 meals/day from meal programs within each city (n=207).

<table>
<thead>
<tr>
<th>City</th>
<th>Estimated homeless population (year of study)</th>
<th>Best Case Scenario</th>
<th>Worst Case Scenario</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Day</td>
<td>People</td>
</tr>
<tr>
<td>Edmonton n=43</td>
<td>1070 (2012)(^{1,5})</td>
<td>Wednesday</td>
<td>1824</td>
</tr>
<tr>
<td>Toronto n=164</td>
<td>400 (2009)(^{4,5})</td>
<td>Wednesday</td>
<td>2280</td>
</tr>
</tbody>
</table>

\(^{1}\) Best case scenario reflects the day throughout the week when the most meals were being served.

\(^{2}\) Worst case scenario reflects the day throughout the week when the fewest number of meals were being served.

\(^{3}\) Edmonton, 2012. Head count was conducted on October 15\(^{th}\), 2012 between 5am and 10pm. Temperature ranged from 7-16 degrees Celsius.

\(^{4}\) Street Needs Assessment, 2009. Head count was conducted on April 15\(^{th}\), 2009 between 7:30 pm and midnight. Average temperature was 9 degrees Celsius.

\(^{5}\) Estimates reflect the total number of people living on the streets.

\(^{6}\) The same volume of meals were being served during a Saturday and a Sunday in Edmonton.

7.3 Discussion

In previous chapters, most discussions concentrated on characteristics associated with individual agencies however; evaluating the entire system of agencies operating within each community afforded us the opportunity to evaluate the responsiveness of the entire network of meal programs responding to food insecurity. By examining the total proportion of meals that
were served by agencies experiencing strain, and by agencies that were able to adhere to nutrition standards, it was possible to draw some inferences about the overall responsiveness of the meals being served within each community. From the results, although there were significant differences between all cities, it appeared Victoria served the greatest proportion of meals that were able to adhere to nutrition standards and the smallest proportion of meals by agencies experiencing strain compared to the other cities. One possible explanation of the variation between cities was that in every city with the exception of Victoria, there was an extremely centralized major distributor which was responsible for supplying resources to the majority of agencies within the community. However, the collection and redistribution of donated foodstuffs in Victoria was extremely decentralized, with the major distributor only supplying food resources to 18% (5/28) of all agencies operating within the city. One implication of this phenomenon may be that agencies in Victoria were less reliant on food supplies from major distributors which were associated with not providing enough food and supplying inedible food. Thus, agencies operating in Victoria may have had access to adequate and nutritious food supplies from alternate sources, enabling agencies to be better equipped to balance the demand for food with their overall resource supply.

Up until this analysis, all meals in our study have been considered equal but we now understand that a large proportion of meals were unable to adhere to nutrition standards or were associated with an agency experiencing various forms of strain. From a user’s perspective, these findings have significant repercussions when considering the huge perturbations in availability of meals throughout the week. Ultimately, it was apparent that the system of meal provisioning was extremely fragile within most communities and was unable to adequately respond to the populations who required nutritional support.
Overall, our results suggest that meal provisioning in Toronto was able to accommodate the entire *unsheltered* homeless population throughout the week, regardless of day-to-day volume perturbations whereas agencies in Edmonton appeared to be unable to serve 3 meals per day to the *unsheltered* population on a Saturday or Sunday (worst case scenario). Although these initial results in Toronto are promising because we understand *unsheltered* homeless individuals are extremely vulnerable from the perspective of nutrition, we must also recognize that only one third of individuals accessing programs in Toronto were considered homeless, and less than half of individuals accessing programs in Edmonton were considered homeless. In addition, although recent studies have noted the nutritional insufficiencies associated with meals served by charitable-based meal programs to homeless populations (Bunston & Breton, 1990; Dachner & Tarasuk, 2002; Hwang & Bugeja, 2004; Langnase & Muller, 2001; McCarthy & Hagan, 1992; Persaud et al., 2010; Rauschenbach et al., 1990), a much larger population base has been reported to be heavily reliant on meal programs for nutritional support (Burt et al., 1999; Himmelgreen et al., 1998; Tarasuk & Dachner, 2009; Gilchrist et al., 2012; McEntee & Naumova, 2012; Romero-Daza et al., 1999). Considering we have no empirical data examining the nutritional needs of these populations, it is difficult to determine if community-based agency strategies and the extreme perturbations in meal provisioning were able to respond to the nutritional needs of these individuals.

In summary, the system of community-based meal programs operating in Victoria offered a greater proportion of meals that adhered to nutrition standards, and did not originate from agencies experiencing strain. Although these analyses did not provide a direct measure of responsiveness, agencies in Victoria appeared to be better prepared to balance their resource supply with the demand for food compared to other cities. In addition, although Toronto was
able to accommodate the *unsheltered* homeless population residing in their community, program directors in Toronto and Edmonton reported that less than half of their clientele were homeless. Ultimately, this finding suggests that a much larger population of individuals residing in communities were reliant on nutritional support from these meal programs and that agency directors must be able to modify program delivery in order to respond to a heterogeneous group of individuals.
Chapter 8 – Final Discussion and Conclusions

8.1 Discussion

Community meal provisioning has become an integral response to homeless and food insecure populations living throughout Canada. Our findings suggest that there were many unique services serving meals within each community including faith groups, community-service agencies, faith-based ministries, and other types of agencies such as health centers and educational institutions. Program delivery varied considerably between individual agencies with some services serving meals once a week and other agencies offering seven day a week comprehensive support with multiple meal service times being offered throughout the day. In many cases, meal scheduling was not determined by user needs but by limitations associated with program delivery, including accommodating the volunteer workforce, limited food supplies, space restrictions, and financial constraints. These findings substantiated findings from a past study which noted that charitable services in Toronto were dependent on the program operators, and schedules were often modified without considering the actual needs of the program users (Gaetz et al., 2006). Our results expanded upon this study by illustrating that this trend transcended one location and was a limitation reported by agencies in all communities.

Overall, our investigation of charitable meal programs revealed that services were ad hoc, fragmented (Tarasuk & Dachner, 2009), provided inconsistent meal provisioning during dinner and weekend serving times (Linares, 2001; Miewald et al., 2010), and that several agencies had a limited capacity to respond to the basic needs of food insecure and homeless populations within a community (Eisinger, 2002; Gaetz et al., 2006).

To date, most research has focused on the nutritional vulnerability associated with homeless individuals (Bunston & Breton, 1990; Dachner & Tarasuk, 2002; Hwang & Bugeja,
2004; Langnase & Muller, 2001; McCarthy & Hagan, 1992; Rauschenbach et al., 1990) and within specific marginalized homeless and under-housed populations including: adults (Baggett et al., 2011; Gelberg et al., 1995; Langnase & Muller, 2001; Lyles et al., 2013; Wicks et al., 2006), women (Baptiste et al., 2009; Bunston & Breton, 1990; Davis et al., 2008), drug-users (Baptiste et al., 2009; Himmelgreen et al., 1998; Romero-Daza et al., 1999; Strike et al., 2012), and youths (Hamelin et al., 2007; Li, Dachner, & Tarasuk, 2009; Persaud et al., 2010; Roy et al., 1999; Smart & Adlaf, 1991; Wang et al., 1991; Wicks et al., 2006). Some studies have investigated the nutritional inadequacies associated with meals served by community-based charitable meal programs to homeless and under-housed populations (Bocskei & Ostry, 2010; Coppenrath, 2001; Darmon et al., 2001; Evans & Dowler, 1999; Tse & Tarasuk, 2008) and recommended that the nutritional adequacy of meals should be improved to be able to provide more responsive services to homeless and under-housed populations. However, a few studies investigating the effectiveness and accessibility of meal programs within communities suggest that improving the nutritional adequacy of these populations is a significantly more complex issue (Bocskei et al., 2010; Dachner et al., 2009; Eisinger, 2002; Linares, 2001). Thus far, studies examining the adequacy, accessibility, and responsiveness of meal programs have focused their analysis on one location, and research has yet to provide an in-depth comparison of community-based meal programs operating within different settings. Therefore, in order to expand on past studies investigating the scope and nature of community-based meal programs, this thesis examined meal programs operating within five different geographic locations. An investigation of five Canadian cities afforded us a unique opportunity to compare the adequacy, accessibility, and responsiveness of community-based meal services within a variety of differing locations to identify the strengths and limitations of meal provisioning occurring within each
city. By identifying communities from different regional areas in Canada, we were also able to compare the totality of meal services which had developed within cities with very different historical and social policies. Finally, a five-city comparison allowed us to compare the adequacy and responsiveness of the total system of meal provisioning responding to hunger and homelessness issues in each community.

Although meal programs were responsible for serving hundreds of thousands of meals during any given week, the limited scheduling of services on weekends and during lunch and dinner service times left gaping voids in nutritional support throughout the week. These findings were also substantiated by past studies examining meal programs in Spain and Vancouver, which suggested there was a paucity of meal provisioning during breakfast, dinner, and weekend serving periods (Linares et al., 2001; Miewald et al., 2010). Unfortunately, this perspective does not even begin to account for the fact that individuals experiencing food insecurity often had to navigate large distances to access various meal programs (Miewald et al., 2010), and consider that many services had limited access to their meal programs because they were attempting to respond to a specific demographic (Dachner & Tarasuk, 2002; Miewald et al., 2010). From the perspective of program users, homeless youth populations appreciated services that offered all-day program hours because it enabled individuals to have more autonomy over decision-making as a result of the increased service hour flexibility (Hamelin et al., 2007; Worthington & MacLaurin, 2013). In addition, location was also cited as a concern by users because some services were located in neighbourhoods that were considered unsafe or at a location for easy access to drugs and alcohol (Worthington & MacLaurin, 2013) or required program users to travel large distances to receive a meal (Miewald et al., 2010). Considering many services only offered limited program hours (Linares et al., 2001; Miewald et al., 2010), homeless youth were
forced to travel large distances if they were searching for more comprehensive support services throughout the entire day. Even once an individual had accessed a program, our findings suggested most agencies were unable to balance their resource supply with the demand for food and were forced to modify and compromise the adequacy of the meals being served.

Although large networks were responsible for soliciting and distributing food supplies to hundreds of agencies operating across Canada, our findings suggest that the charitable model of resource solicitation from food distribution agencies were linked with increased difficulties associated with maintaining an adequate supply of meals. Based on these results, there is a need for improved mobilization of financial resources to support meal programs in each city. Intuitively, an improved financial resource supply would enable agencies to augment their donated meal supply, enhance the adequacy of the meals being served, and offer additional monetary support to improve the delivery of services.

Past international and Canadian studies have suggested that services responding to homeless populations have transitioned from large-scale temporary response agencies to individualized multi-service agencies that are better able to respond to the complex needs of certain populations (Baptiste et al., 2009; Comox Valley Housing Task Force, 2013; Edgar et al., 1999; Strike et al., 2012; Wicks et al., 2006). This multi-service approach has enabled agencies to develop preventative strategies to reduce homelessness rather than merely offering temporary emergency-aid services that do not seek to reduce the problems associated with homelessness. Of note, although research has advocated for the integration of services and suggested that vulnerable populations would benefit from more comprehensive services, no study has compared the delivery of meal programs combined with a variety of services to address the underlying problems of homelessness and poverty to agencies only offering basic meal services. Therefore,
this thesis expanded upon past research by providing a direct comparison of multi-service agencies versus basic agencies that afforded us an opportunity to compare the organization, management, resource supply, and program delivery of both agencies.

These findings revealed that multi-service agencies were responsible for the majority of meal provisioning occurring within each community which was partially due to the fact that they offered services more frequently but also because they operated larger meal services. In terms of management structure, multi-service agencies were more likely to hire paid staff members to organize and coordinate the delivery of multiple services whereas basic agencies had a greater reliance on volunteer labour to organize their meal program. It was interesting to note that although the organization and management of both types of agencies were significantly different, both agencies were extremely reliant on donated food supplies to support their meal programs. It was also interesting to note that although recent national and provincial funding sources have typically identified multi-service agencies as the optimal strategy for addressing homelessness concerns and financially supported these organizations (Human Resources and Skills Development Canada, 2011), multi-service agencies were actually less likely than basic services to receive specific dedicated funding to support the operation of their meal program. In fact, these findings suggested that although multi-service agencies offered a number of services in an attempt to reduce homelessness and poverty and were responsible for the majority of meal provisioning in communities, they were less likely to receive specific financial support for their meal programs and were not necessarily better able to manage their supplies with the demand for food from their clientele. Therefore, although the development of multi-service agencies is a positive and necessary progression to help reduce homelessness populations in local communities (Comox Valley Housing Task Force, 2013; Edgar et al., 1999; Human Resources
and Skills Development Canada, 2011; Strike et al., 2012; Wicks et al., 2006), there may be a need for increased resources and funding to improve the adequacy and capacity of meal programs to respond to the unmet food needs of homeless and under-housed populations across Canada.

Prior to this study, one study evaluating individual food assistance programs was undertaken in Detroit (Eisinger, 2002). Eisinger’s study investigated the organizational effectiveness and capacity of 92 food assistance programs, which included both food pantries and soup kitchens located in the downtown core during the winter of 1999. From his results, Eisinger (2002) concluded that the presence of paid staff and the computerization of records improved the organizational capacity of individual meal programs or enabled a program to attain agency goals.

Although these findings suggested that agencies hiring paid staff members were associated with serving meals more frequently and serving a greater volume of meals, this study did not provide a direct Canadian comparison of food assistance programs because his measurements of effectiveness and capacity did not completely align with our research questions. Instead, where Eisinger (2002) investigated the capacity of individual meal services to respond to the unmet food needs of homeless populations, our conclusions build upon his research by investigating the responsiveness of the total system of agencies providing meal provisioning within each community. We commend Eisinger (2002) for suggesting the organization, management, and structure of individual agencies influenced their capacity to respond to their clientele or enabled an agency to modulate their donated food supply to meet the needs of their program users, never turn away eligible clients, or assisted clients when applying for food from other food assistance programs, however; we also recognized that by examining
the adequacy of the entire system of meal provisioning within each community, we would be able to compare and evaluate the responsiveness of the totality of services responding to food insecurity within each city. In fact, our research suggested that the entire system of meal provisioning in Victoria was significantly more likely to provide meals that adhered to nutrition standards than Edmonton, Toronto, Quebec City, and Halifax, and the meals served in Victoria were less likely to be served by agencies experiencing strain compared to all other cities. Although we were able to identify differences between cities, future research is necessary to improve our understanding of systemic factors that enable a community to enhance their responsiveness to the unmet food needs within a community.

Findings from this study highlight the importance of program planning and coordination to ensure basic food needs are met. These results suggested that there was limited coordination between agencies to ensure that comprehensive support services were offered on a daily basis. Elsewhere in Canada, Miewald et al., 2010 described a phenomenon in Vancouver where homeless individuals were forced to travel large distances to access a variety of services across the city to obtain at least three meals every day. Although this study was based in Vancouver, the thematic elements of his findings are consistent with our findings (Miewald et al., 2010). In many cases, agencies in all cities did not offer daily services and considering we were unable to identify many networks of coordination within communities, homeless individuals and populations experiencing severe food insecurity likely were forced to access a variety of services to receive at least three meals every day. Ultimately, meal provisioning for homeless individuals and populations experiencing food insecurity needs to be integrated within a larger health promotion strategy. However, to date, local communities have been responsible for addressing local hunger issues resulting in what appears to be an ad hoc, fragmented, fragile group of
services that are unable to adequately respond to populations experiencing food insecurity. The introduction of federal government financial support through the Homeless Partnering Strategy and the continuing support from provincial government is a positive development however; funds continue to be allocated to local community initiatives, and there does not appear to be any national public policy strategies ensuring more complete coverage and support for local initiatives responding to these vulnerable populations (Human Resources and Skills Development Canada, 2011). A federal, provincial, and local food insecurity public health strategy would enable cities and communities to maintain an inventory of services and establish a new system of coordination between agencies in each city to provide services on a daily basis. By introducing a multi-tiered government strategy, this would create an opportunity to introduce and maintain specific standards of nutritional support that will allow agencies to have the ability to more effectively respond to individuals experiencing food insecurity.

Recent federal funding policies have prioritized housing first strategies to address homeless populations. For example, the At Home/Chez Soi Housing First strategy received 110 million dollars in 2008 from the federal government to support the project throughout a five-year demonstration period in several communities across Canada (Mental Health Commission of Canada, 2008). More specifically, the At Home/Chez Soi Housing First program has focused on providing housing accommodation to homeless populations through access to rent subsidies while integrating a variety of social service support options to assist individuals. Although this strategy appears to be an effective progression from focusing on temporary emergency strategies towards developing a preventative reduction approach to address homelessness in communities, the role of food and nutrition is an integral component that must be integrated within the model. More specifically, the National Alliance to End Homelessness (2006) has campaigned for
additional support including nutritional services for housing first initiatives because homeless individuals frequently require assistance once they are housed because they are often experiencing financial instability. Ultimately, these reports advocate for a continuum of care that must be implemented quickly to remove homeless individuals from the streets, while integrating a variety of services to prevent individuals from transitioning back into a state of homelessness.

From our results, although there appeared to be some evidence of agencies tailoring their programs to respond to a certain demographic, recent advances in our understanding of the fluidity and classification of homeless populations, and our understanding that program directors acknowledged a large proportion of program users were not homeless necessitates the need to rethink the delivery of services in communities (Aubry et al., 2013; Canadian Homelessness Research Network, 2012; Edgar et al., 1999; Kuhn & Culhane, 1998). Continuing to provide isolated meal services without addressing larger systemic issues associated with homelessness and hunger is a temporary reactive strategy that does not address the root cause of the problem. Ultimately, the needs of various populations experiencing food insecurity are unique and must be addressed in order to provide customized services that are better able to effectively respond to various identified populations.

8.2 Limitations

The present study has several limitations. First, we relied on self-reported data from various program directors and employed different research assistants within each community to conduct interviews, thus our findings may be subject to response biases. It is plausible that program directors may have underreported their experiences of strain but also possible that directors exaggerated their program’s ability to respond to the nutritional needs of their clientele. Second, it should be noted, that original inventory of agencies that was created to investigate
meal provisioning in Canadian cities may have been incomplete. Understandably, the task of examining agencies responding to hunger and homelessness within communities was made more complicated by the need to first generate this list. Until this study, there had been no comprehensive strategy to monitor or generate a catalogued inventory of community-based agencies offering meal provisioning. It is possible that some isolated agencies were not captured during the data collection process. Moreover, the participation rate for the study was not 100%, and given the high variability in the volume of meals served throughout the week, it is possible that we have not recorded all meal services operating within a community. Thus, given potentially missing data, particularly in smaller cities such as Victoria, Halifax, and Quebec City, omitted services may have accounted for a sizeable proportion of the total number of meals served with the community. It should also be noted that data was recorded over two years ago (November 2010 to September 2011), and some agencies may have modified the structure, organization, and management of their agency since the interview was conducted. In addition, as this study employed a cross-sectional design, it was not possible to examine temporal relationships between beyond one year changes.

Our study was focused on the characteristics associated with community-based meal programs, but we did not investigate the nutritional needs of the populations accessing these services. Unfortunately, the absence of this information makes it impossible to know how well existing programs were responding to need. Our findings suggested many agencies were experiencing problems balancing their supply of resources with the demand for food, but until we have a more thorough grasp of the extent of nutritional need from the individuals accessing these services, we are unable to provide effective recommendations that will improve the responsiveness of meal programs serving homeless and hungry populations.
The design of the study recorded characteristics relating to program delivery, management, and resources, and as such we had no direct measurement investigating the nutritional adequacy of the meals being served within each agency. As a result, an agency’s ability to adhere to nutritional standards and the probability of experiencing strain served as a limited proxy for the nutritional adequacy of the meals being served. Moreover, there may have been variability between the nutrition standards employed by different agencies, and although all standards were treated as equal, some agencies may have used more rigorous protocol to ensure healthy meals were being served in their meal programs. Thus we really do not know the nutritional adequacy of meals being served by agencies and our results were only able to characterize the fragile nature of meal provisioning occurring within each community.

Our findings noted significant differences between Victoria and the other cities, but the limitations of our data only allows us to speculate why Victoria appeared to be able provide more adequate meals to populations experiencing food insecurity. Finally, although five cities were chosen because they afforded us the opportunity to compare and contrast community-based responses to hunger and food insecurity across Canada, the application and generalizability of these findings to other cities is limited by the fact that communities have applied different policies and practices to respond to homeless and food insecure populations.

8.3 Future Directions for Research

Research investigating the temporal trends of agencies responding to homelessness and hunger in Canada is currently unavailable. The findings from this study provide a comprehensive comparison of community responses to homelessness and hunger within each city however; incorporating a longitudinal component would provide an important analysis of growth or potential change within each location. This would offer invaluable insight into how
communities are modifying their services to meet the demands of populations experiencing food insecure populations over time and identify areas for improvement.

Our findings also revealed that the overall system of meal provisioning in Victoria was more responsiveness than the system of agencies operating in other cities. Our research was limited by the fact that we were unable to determine which systemic factors enabled Victoria to orchestrate a more responsive system compared to the other communities; thus, there is a need for more research investigating this phenomenon. Ultimately, an in-depth ethnographic analysis investigating the emergence and configuration of community-based efforts in each city and individual program evaluations are necessary to determine factors that enable or restrict a system of community-based meal provisioning from responding to their clientele.

In terms of future directions, it is often difficult to offer recommendations that will provide effective outcomes because we have only partially described food insecurity issues in Canadian communities. One important question is whether this system of community-based meal programs is a system that Canada should be supporting. In terms of progression, it is apparent that recent strategies have introduced housing first initiatives to address homelessness and poverty in our country (Mental Health Commission of Canada, 2008; National Alliance to End Homelessness, 2006). Moreover, although the government sector continues to support multi-service agencies that focus on assisting homeless individuals to remove themselves from the streets, our research has demonstrated that there are many problems associated with the delivery and organization of their meal programs. Thus, it is important to consider if resources being allocated to meal services in these agencies are producing the most effective outcome or whether there should be a reallocation of resources to support the integration of meal programs into other initiatives. However, in order to properly evaluate the effectiveness of meal services responding
to homeless and food insecure populations it is necessary to first characterize who is eating within these programs and describe the total extent of their nutritional needs. We understand that integrating meal programs with other services targeting homeless and impoverished populations is a beneficial development to address poverty within a community, but until we understand the nutritional needs of these individuals, it will be difficult to determine the total extent of reliance on meal programs. Ultimately, a detailed investigation of the nutritional needs of these individuals will offer invaluable insight into the demand for food support in Canadian cities and provide direction to the government and local communities on how to improve nutritional support services and strategies within our communities.

8.4 Conclusions

This research has investigated the scope and nature of meal provisioning services through a thorough examination of the organization, management, and delivery of meal programs operating within five Canadian cities. Our findings suggested that the mobilization of donated resources to serve hundreds of thousands of meals to homeless and nutritionally vulnerable populations in each community was a massive undertaking that should be commended. However, inconsistent service provisioning patterns, limited coordination between agencies, and an inadequate resource supply severely limited the capacity for agencies to respond to their clientele. Moreover, a detailed examination of agencies suggested that many programs, specifically meal programs operating within multi-service agencies, were unable to manage their resource supply with the demand for food from their clientele which ultimately compromised the nutritional adequacy of the meals being served. Despite agencies efforts to serve nutritiously adequate meals, the lack of financial support and reliance on donated food supplies have likely contributed to the precarious nature of charitable meal provisioning in Canada. Unfortunately, it
appears most agencies have continued to solicit and be reliant on donations because other feasible financial support solutions have failed to materialize. On the other hand, although services continue to be reliant on donations, agencies in Victoria were more likely to serve meals adhering to nutrition standards and were less likely to serve meals from agencies experiencing strain compared to other cities. These findings suggest that meal provisioning varied between cities however; further research is necessary to identify which systemic factors enabled Victoria to deliver more adequate and responsive services.

Despite the precarious nature of meal provisioning in Canada, the reorganization of the system of meal programs in each community is a necessary and possible progression. However, first, a greater understanding of the needs of the populations accessing these services, and more rigorous comprehensive program evaluation is required to provide recommendations to improve the overall effectiveness of program delivery. Ultimately, findings from this study highlight the strengths and limitations of the current food provisioning system and a need for more deliberate commitment of financial investment and improved coordination between services to improve the capacity of agencies to respond to populations experiencing poverty and food insecurity in Canadian cities.
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Appendix

Table 29. Summary of homeless counts in each city.

<table>
<thead>
<tr>
<th>City</th>
<th>Research Study</th>
<th>Data Collection Methods</th>
<th>Male Homeless</th>
<th>Female Homeless</th>
<th>Youth Homeless</th>
<th>Total Number of Homeless</th>
</tr>
</thead>
<tbody>
<tr>
<td>Halifax</td>
<td>Halifax Report Card, 2009</td>
<td>Collected data from the Homeless Families and Individuals Information System (HIFIS) concerning the number of people accessing emergency shelter beds</td>
<td>753</td>
<td>340</td>
<td>16-19 yr olds: 82 &lt;16: 77</td>
<td>1252 stayed in a shelter</td>
</tr>
<tr>
<td></td>
<td>Halifax Report Card, 2010</td>
<td>Collected data from HIFIS concerning the number of people accessing emergency shelter beds</td>
<td>869</td>
<td>574</td>
<td>16-19 yr olds: 176 &lt;16: 199</td>
<td>1712 stayed in a shelter</td>
</tr>
<tr>
<td>Quebec City</td>
<td>Fournier, 1998</td>
<td>Surveyed the number of people using soup kitchens, shelters, and day centers every month for a full year. People were surveyed hierarchically to prevent overestimation.</td>
<td>63%</td>
<td>37%</td>
<td>N/A</td>
<td>3589</td>
</tr>
<tr>
<td>Toronto</td>
<td>Street Needs Assessment, 2006</td>
<td>Point-in-Time Count: Volunteers conducted one nighttime survey of individuals living on the street in Toronto after dividing the city into sections. Surveys were also conducted at all emergency institutions throughout the city.</td>
<td>81.6%</td>
<td>17.7%</td>
<td>9.4%</td>
<td>5052</td>
</tr>
<tr>
<td></td>
<td>Street Needs Assessment, 2009</td>
<td>Point-in-Time Count: Volunteers conducted one nighttime survey of individuals living on the street in Toronto after dividing the city into sections. Surveys were also conducted at all emergency institutions throughout the city.</td>
<td>69.4%</td>
<td>29.6%</td>
<td>8%</td>
<td>4901</td>
</tr>
<tr>
<td>Edmonton</td>
<td>Edmonton, 2000</td>
<td>Point-in-Time Count: Volunteers conducted a survey over the course of one day at emergency shelters, short-term housing facilities, food banks, drop-in centers and bottle depots asking individuals if they had a permanent home to live in.</td>
<td>638</td>
<td>238</td>
<td>108</td>
<td>1160</td>
</tr>
<tr>
<td>Location</td>
<td>Year</td>
<td>Methodology</td>
<td>Count</td>
<td>Percent 1</td>
<td>Percent 2</td>
<td>Percent 3</td>
</tr>
<tr>
<td>-------------------</td>
<td>---------</td>
<td>-----------------------------------------------------------------------------</td>
<td>-------</td>
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</tr>
<tr>
<td>Edmonton</td>
<td>2008</td>
<td>Point-in-Time Count: Volunteers conducted a survey over the course of one day at emergency shelters, short-term housing facilities, food banks, drop-in centers and bottle depots asking individuals if they had a permanent home to live in.</td>
<td>2124</td>
<td>702</td>
<td>245</td>
<td>3079</td>
</tr>
<tr>
<td>Edmonton</td>
<td>2010</td>
<td>Point-in-Time Count: Volunteers conducted a survey over the course of one day at emergency shelters, short-term housing facilities, food banks, drop-in centers and bottle depots asking individuals if they had a permanent home to live in.</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>2421</td>
</tr>
<tr>
<td>Edmonton</td>
<td>2012</td>
<td>Point-in-Time Count: Volunteers conducted a survey over the course of one day at emergency shelters, short-term housing facilities, food banks, drop-in centers and bottle depots asking individuals if they had a permanent home to live in.</td>
<td>1446</td>
<td>487</td>
<td>279</td>
<td>2174</td>
</tr>
<tr>
<td>Victoria</td>
<td>2007</td>
<td>Point-in-Time Count: Over the course of 5 days, volunteers conducted a survey of homeless individuals residing within the city limits.</td>
<td>64%</td>
<td>34%</td>
<td>2%</td>
<td>1242</td>
</tr>
<tr>
<td>Hungry and Homeless in Greater Victoria</td>
<td>2010/2011</td>
<td>5 of 6 shelters located in Victoria recorded the number of unique program users who had accessed their emergency services over the past year</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>1958 unique individuals accessed 5/6 total shelters in Victoria in the past year</td>
</tr>
</tbody>
</table>
CHARITABLE FOOD ASSISTANCE SURVEY          UNIVERSITY OF TORONTO
2010/2011

DATE: __________________________

IDENTIFYING INFORMATION
City: ____________________
Name of Agency: __________________

DESCRIPTION OF AGENCY
How would you describe your type of agency/organization? (Check one)
- soup kitchen
- food bank/food depot/food pantry
- health centre
- community centre
- day shelter / drop-in centre
- church/synagogue/mosque/faith-based centre
- community-service agency
- other – Please specify: ______________________

Is providing food assistance to those in need your organization’s main activity?
- Yes
- If no – What is your organization’s main activity? _________________________________

What kind of charitable food assistance does your organization offer?
- Meals and/or snacks for consumption on the premises
- Meals and/or snacks for clients to take away
- Meals and/or snacks distributed through street outreach
- Groceries to take home
- Food vouchers
- Other – Please describe: ______________________

In what year did your organization begin providing food assistance? __________
Why did your organization begin providing food assistance?
________________________________________________________________________
________________________________________________________________________

In providing food assistance, does your agency/organization target any specific groups?
- No – (Confirm that there are no restrictions/requirement that someone must meet in order to receive food (i.e. age, gender, participation in a program)?)
- Yes – Who? ________________________________

MEAL/SNACK PROGRAMS
The following questions apply only to meal/snack programs being operated by the agency/organization.
Please describe your schedule of meals/snacks. *(Use the table to fill in the following details – days food is served, times food is served, and how many people eat at each time).*

<table>
<thead>
<tr>
<th>Time meals/snacks are served (Use 24 hr notation)</th>
<th>Number of people served at each time</th>
</tr>
</thead>
<tbody>
<tr>
<td>From ____ to ____</td>
<td>Sun</td>
</tr>
<tr>
<td>From ____ to ____</td>
<td></td>
</tr>
<tr>
<td>From ____ to ____</td>
<td></td>
</tr>
<tr>
<td>From ____ to ____</td>
<td></td>
</tr>
<tr>
<td>From ____ to ____</td>
<td></td>
</tr>
</tbody>
</table>

Do your meal/snack programs operate every month of the year?  
Yes  
No – Which months do you serve food? *(Checklist of months)*

For the months when your meal/snack programs are running, do they run weekly?  
Yes  
No - How often do you serve food? *(Check one)*

Every two weeks  
Once a month  
Other – please describe: ________________

In a typical day of operation, how many people would obtain meals or snacks from your program(s)? ______

Thinking back to one year ago, how many people would have obtained meals or snacks from your program(s) in a typical day? ______

How many people tend to be ‘regulars’, by that I mean that they eat in your program every day? ______

What percentage of the clients in your meal/snack programs is homeless? By homeless we mean people who are sleeping in a temporary shelters, indoor or outdoor private or public space, or someone else’s place, because they have no place of their own. _____%

How is the food in your program served?  
self-service buffet  
cafeteria style service  
individuals are brought food while they sit at a table  
handed out from outreach van or mobile service
What determines the days and times when you serve food?

Are your meal/snack program(s) free?
Yes
No – How much must people pay? $________per meal
   Why did your agency decide to charge for meals/snacks?

Do you use any nutrition guidelines or standards to plan what food you provide?
Yes – Please specify: _____________________________________________________________
How well are you typically able to meet these nutrition guidelines or standards?
usually able to follow guidelines
some difficulty following guidelines – please specify: __________
No – How do you decide what to provide? _______________________________________

Do you ever have difficulty seating everyone who comes to eat?
Yes – Please describe: _________________________________________________________
No – confirm: So you don’t ever have to serve clients in shifts?

Do you distribute tickets before serving times, such that only clients with tickets may eat?
Yes - Why did you decide to use tickets?________________________________
No, tickets are not used

How do you handle requests for more food?
No seconds or extras allowed
Serve everyone first, seconds if possible
Always do something to give more food to people who ask for it
No one ever requests more food than we provide
Other – specify: ___________________________________________________________________

We understand that running a meal or snack program can be very difficult, especially since resources can sometimes be scarce, but need is always so great. We are trying to get a sense of how programs like yours cope in these situations. In the course of a typical month, do you ever:
cut portion sizes to stretch the food supply so that you can serve more people? a)
   Often b) Sometimes c) Never
serve fewer types of food than planned because you are running out of food? a)
   Often b) Sometimes c) Never
serve food that you weren’t planning to, so that you can serve more people? a)
   Often b) Sometimes c) Never
turn away clients because you don’t have enough food? a) Often b) Sometimes c) Never
prioritize who will eat because you don’t have enough food a)
   Often b) Sometimes c) Never
shorten or cancel serving times due to a lack of food?
a) shorten times  b) cancel times  c) both  d) neither

Is there anything else you do when you are running low on food?

Nothing else.

We never run low on food.

Yes - Please describe: ____________________________________________

FOOD BANK/FOOD DEPOT/FOOD PANTRY PROGRAMS

These questions apply only to food hamper programs run by the agency/organization.

When (i.e., days and times) is your food hamper program open for distributing food? (Check the day(s) and fill in the times in 24-hour notation)

<table>
<thead>
<tr>
<th>Day</th>
<th>From 12:00 to ___ AND From ___ to ___</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sun</td>
<td>From ____ to _____ AND From _____ to _____</td>
</tr>
<tr>
<td>Mon</td>
<td>From ____ to _____ AND From _____ to _____</td>
</tr>
<tr>
<td>Tues</td>
<td>From ____ to _____ AND From _____ to _____</td>
</tr>
<tr>
<td>Wed</td>
<td>From ____ to _____ AND From _____ to _____</td>
</tr>
<tr>
<td>Thu</td>
<td>From ____ to _____ AND From _____ to _____</td>
</tr>
<tr>
<td>Fri</td>
<td>From ____ to _____ AND From _____ to _____</td>
</tr>
<tr>
<td>Sat</td>
<td>From ____ to _____ AND From _____ to _____</td>
</tr>
</tbody>
</table>

Does this schedule stay the same throughout the month?

Yes

No – please describe: ________________________________

How frequently can one household obtain food assistance from you?

From # times _____ per ________ (give options: week, month, year)

to # times _____ per ________ (give options: week, month, year)

If the frequency varies, on what does it depend?

Income available for food       Yes   No
Family type                     Yes   No
Other - please specify: ________________

How is the food distributed?

Pre-packed and given to individual

Selected by individuals

Partially selected by individuals, partially determined for them

If a family consisting of 1 adult and 2 children comes in to your food bank, how many bags of food do you give them? ________________

If food bank only serves individuals: If an individual comes in to your food bank, how many bags of food do you give him/her? ________________

Do you use any nutrition guidelines or standards to plan what food you provide?

Yes – Please specify: ________________________________

How well are you typically able to meet these nutrition guidelines or standards?

usually able to follow guidelines

some difficulty following guidelines – please specify: ________________
No - How do you decide what to provide? _______________________________________

How do you handle requests for more food?
Unable to give more food
Can give more food sometimes – Please describe: ____________________________________________

Generally do not get requests for more food.
In the last year, have you changed how much food you give to the people you serve?
Increased – (explain why): ________________________________________________________
Decreased – (explain why): ________________________________________________________
No change

How many households receive food from your program in a month, if you count each household only once, regardless of the number of times you served them? _______________
How many individuals does this represent? (Include all of the people who come to collect food, and all of the people in their households) ___________________
What proportion of the households you serve in a month is coming as often as permitted? ______% 
Thinking about one year ago, how many households would have received food from your program in a month, if you counted each household only once, regardless of the number of times you served them? _______________
What information do you require from someone coming to use your food bank for the first time?
Location of residence
Amount of income available for food
Other – please specify: _______________
No information required, anyone who comes is served
In the last three years, have you made any changes to eligibility criteria in response to increased needs in particular groups?
Yes – please describe: ____________________________________________________________
No
We understand that running a food bank can be very difficult, especially since resources can sometimes be scarce, but need is always so great. We are trying to get a sense of how programs like yours cope in these situations. In the course of a typical month, do you ever:
cut hamper sizes to stretch the food supply so that you can serve more people? a) Often b) Sometimes c) Never
change the types and/or variety of food included in a hamper due to lack of food? a) Often b) Sometimes c) Never
prioritize who will get hampers because you don’t have enough food a) Often b) Sometimes c) Never
turn away people because you don’t have enough food? a) Often b) Sometimes c) Never
have to shorten, or cancel hours of operation due to lack of food? a) shorten times b) cancel times c) both d) neither
Is there anything else you do when you are running low on food?
Nothing else.
We never run low on food.
Yes - Please describe: ________________________________

These questions apply to the entire food assistance operations of agency/organization

AGENCY RESOURCES (FOOD, MONEY, STAFF)

Food Resources
In a typical month, how much does your organization spend on food? $___________
In a typical month, what proportion of the food your organization distributes directly to individuals or households is purchased and what proportion is donated?
% purchased___________________
% donated___________________
Thinking back to this same month one year ago, how much would your organization have spent on food? $________
Thinking back to this same month one year ago, what was the proportion of food received through purchase and donations?
% from purchases _____________
% from donations ______________
Do you receive food regularly from any major food donation distributors?
Yes
Who? __________________________
What percentage of your donated food comes from them?__________
No

Do you receive food donations from any local businesses?
Yes - Please name businesses:____________________________________________
Is this primarily food that could not be sold?
Yes No NA (donations are not from retail sector)
No

From whom else do you receive food donations? (Probe for local groups, individuals, charities and other sources, and record main donors)
_________________________________________________

Do you regularly do fund-raising for your food program, and/or to obtain food donations?
Yes
No

From this supply of food, do you regularly provide food to any other community programs?
Yes – What programs? ______________________________________
What proportion of your total food supply goes to these programs? ______
No

We understand that it can be very difficult to manage the food supply of programs like yours.
Which of the following problems do you face?
Difficulty sorting and using donated food before it perishes
Often Sometimes Never
b. Difficulty storing/managing food donations
   Often   Sometimes   Never

c. Difficulty obtaining enough food donations to meet your needs
   Often   Sometimes   Never

d. Receiving donated food that is inedible
   Often   Sometimes   Never

e. Other – please explain:
   _______________________________________________________________

If more than one, which of these problems has the biggest effect on your operations? ______

Funding
Where do you get the funds from to run your food assistance programs? Name all funding sources. (Probe about government grant programs, private donations, funding from large charities, partnerships and foundations (e.g., United Way, Salvation Army, etc.))

<table>
<thead>
<tr>
<th>Funder</th>
<th>Amount</th>
<th>Are these funds specific to the food program or shared among other programs?</th>
<th>Is this core* funding?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td>Specific                    Shared</td>
<td>Yes</td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td>Specific                    Shared</td>
<td>Yes</td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td>Specific                    Shared</td>
<td>Yes</td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td>Specific                    Shared</td>
<td>Yes</td>
</tr>
<tr>
<td>5.</td>
<td></td>
<td>Specific                    Shared</td>
<td>Yes</td>
</tr>
</tbody>
</table>

*Core funds are continuous funds dedicated to certain costs.

Are some of your funds used for rent and/or utilities?
Yes
No – Who covers the cost of rent and/or utilities? ____________

Compared to one year ago, has the funding for your food program
Increased
Decreased
Stayed the same
No Funding

We understand that funding a food program can involve some unique challenges. Which of the following challenges do you face?

a. Difficulty securing predictable, long term funding
   Often   Sometimes   Never

b. Difficulty finding funding opportunities to apply for
   Often   Sometimes   Never

c. Difficulty finding time and resources to fill out grant applications
   Often   Sometimes   Never

d. Difficulty finding funding program that would allow us to pay for the costs of our food assistance programs
   Often   Sometimes   Never
e. Difficulty managing fundraising activities

- Often
- Sometimes
- Never

f. Other – please explain: ___________________________________________

If more than one, which of these problems has the biggest effect on your operations? _____

Staff

On a typical day, how many people are working in your food program(s):

- As paid staff? _______
- As volunteers? _______

How many people working in your food program are there to fulfil work or volunteer requirements for welfare benefits? _______

While your food program(s) are in operation, do you have workers who are assigned specifically to the task of keeping the space safe (e.g., security personnel)?

Yes – Are these workers paid?  

- i) Yes  
- ii) No

No

PLANNING, EVALUATION AND OTHER SERVICES

How do you make people aware of your food assistance program(s)? (Check all that apply)

- Signs  
- Active outreach (e.g., posters, leaflets, public notices)  
- Own website/web-based directories

Other – Please describe: _____________________________

Are your food program(s) intentionally timed to be offered when your clients are most in need of food (e.g., no other organizations nearby offering food, programs timed in relation to cheque days)?

Yes – What has been taken into account when scheduling?

___________________________________________________________

No – Why not? ______________________________________________

Thinking about the people who come to your food program(s), are there people who need more assistance in meeting their food needs than you are able to provide?

a) Yes  

b) No  

c) I don’t know.

Thinking back over the last 3 years, have you:

a) introduced new food assistance programs?

- Yes – please describe: ________________

No

b) stopped offering some food assistance programs?

- Yes – please describe: ________________

No
If you had more resources, would you expand your program to provide food more often, and/or to more people?
Yes – What prevents you from doing this?
Limits in food supply Yes No
Limits in staffing capabilities Yes No
Size and/or quality of facilities Yes No
Limits in Funding (quantity and/or stability) Yes No
Other – specify: ________________________________________________
No – Why not? ________________________________________________

Does your organization belong to a larger network or group of agencies providing similar services?
Yes – Name the group(s)_____________________________________
No

What else do you offer people coming to the food program(s)? (Check all that apply)
Yes No help accessing other services (e.g., housing, employment, social assistance, legal aid)
Yes No counselling and personal support
Yes No advocacy related to poverty reduction/policy change

TO CONCLUDE
Is there any other food assistance you provide to people coming to your organization that we have not talked about here?
Yes – please describe: ___________________________________________
No

For the questions that you did not know the answers to, is there anyone else who might be able to fill in the gaps? a) Yes b) No
If so, what is this person’s:
Name: _______________________________________________________
Role in relation to the program: _________________________________
Contact information: ___________________________________________