Inner City Health Promotion Needs Assessment and Policy Recommendations to Support Delivery of Programs and Services

by

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Abstract

Background: In Alberta, and across Canada, health care costs continue to rise at an unsustainable rate. Over the past five years, the cost of delivering healthcare has outpaced the annual rate of inflation by nearly four percent. Health services use is driven by health needs and characteristics associated with health status. Through the investigation of health status, characteristics associated with health status, types of health services and information available, and policies that support the delivery of programs and services to Edmonton's vulnerable inner city residents. We looked at how, in a system with escalating costs, unnecessary use can be mitigated by having the right service in the right place at the right time.

Methods: 110 vulnerable inner city adults were recruited from the Boyle Street Community Services drop-in program and the Boyle McCauley Health Centre, in downtown Edmonton, Alberta, between September 2011 and February 2012. Cross-sectional data was collected on health status, health determinants and access to care. Linear regression analysis was used to investigate the association between health status and *age*, *gender*, *cultural identity*, *education*, *income level*, *social supports (being in a relationship/living alone/having children)*, *legal status*, *employment status*, *quality of food consumed*, *housing status*, *problematic alcohol and drug use*, *strategies to cope with life stressors*, *chronic disease*, and *depression*. Descriptive statistics and qualitative analysis was used to understand

access to services and information to identify needs. Finally, a review of Canadian health promotion policy influences and evidence-based initiatives to support health promotion constructs and achievement of the pre-requisites for achieving better health, to generate healthy public policy recommendations suitable to the local and provincial context was completed.

Results: Edmonton's inner city residents experience a significantly compromised health status, where 72% have lower physical health and 69% have lower emotional well-being than men and women of similar age. Lower health status is most strongly associated with chronic disease, Emergency Department use, age, mental health (depression and coping), housing, and value of personal possessions. One protective factor for lower health status is having children. In Alberta 1% of the population account for 44% of healthcare expenditures and they have a 28% predicted 1-year mortality rate; which is similar to the 26% predicted mortality rate of Edmonton's inner city residents whose health needs require significant program and service supports.

Interpretation: In order to offset increasing fiscal pressures and improve the health of Edmonton's inner city residents, an immediate investment in the following Alberta policy alternatives is required:

- Expand the Alberta Human Services integrated housing and supports framework model;

- Continue to build integrated Alberta Health Services mental health and addictions supports;
- Expand the Alberta Health Services Community Health Centres model;
- Improve service coordination through the Alberta Health Services, Royal Alexandra Hospital Inner City Health and Wellness Campaign, The Alex and CUPS; and
- Invest in Alberta Primary Care Network programs.

Keywords: Inner city, needs assessment, health needs, determinants of health, health system use, health services planning, health services delivery, health care costs, health status, visual analogue scale (VAS), SF12v2, depression, PHQ9, age, gender, cultural identity, education, social supports, legal status, employment status, housing, ARC Questionnaire, problematic alcohol use, Alcohol Use Disorders Identification Test (AUDIT), problematic drug use, Drug Use Disorders Identification Test (DUDIT), coping, active coping, avoidant coping, Brief COPE, chronic disease, mortality risk, Charlson Comorbidity Questionnaire, Charlson Comorbidity Index, access to health services, access to health information, housing first

Preface

This thesis is an original work by Terry Fung. The research project, of which this thesis is a part, received research ethics approval from the University of Alberta Research Ethics Board, Project Name "Health Promotion Needs Assessment for Inner City People," No. Pro00021209, approved August 5, 2011. No part of this thesis has been previously published.

Dedication

This thesis is dedicated to:

My husband, Nathan, for unconditional love, understanding and support throughout this degree, and in our life together.

My daughters, Ella and Addy, who provide me with an endless source of inspiration.

My parents and my parents-in-law, who encouraged me to follow my passions, and provide me with unconditional love and encouragement.

My supervisor, Dr. John Church, and committee – who provided me with understanding, patience, enthusiasm and gentle guidance through the development of this thesis.

Acknowledgement

I would like to express my gratitude and appreciation to my supervisor, Dr. John Church, for his guidance and continued support. His understanding of and enthusiasm towards the study of health systems is a source of inspiration and encouragement. This thesis would not have been possible without the guidance and support of my supervisor, who patiently assisted me in overcoming barriers that I encountered.

It is also my pleasure to extend my sincere thanks to the following people:

- My supervisory and examination committee members, Dr. Kathryn Dong, Dr. Ian Colman and Dr. Candace Nykiforuk, for their advice and constructive feedback in the development of this project.
- Marliss Taylor for her support in developing an approach that would meet the needs of the inner city agencies and community.
- My family for their love and incredible encouragement.
- And last but not least, my husband, Nathan Fung, whose love, patience, thoughtfulness, humour and never-ending support accompanied me through this journey; and my lovely daughters, Ella and Addy, who are in many ways an inspiration for this journey.

For this study, 110 individuals completed a survey questionnaire – providing valuable information about their health and health needs. As part of this

study, individuals were invited to have their name appear on a list of expert sources; the following names were provided and are listed in alphabetical order:

ABF

Arron

Alex Dumond

Bernie Guy

Bev

Big B

Carleton Hirtle

Crazy Cree

DA

Darek

Dwayne LePretre

Enjay Blyan

Gerald Funtasz

Glen Der

Glenn Ray

Guy

Harry McKenzie

HC

Jackie Ithrum

James Darvell “Wander my spirit”

James Laidlaw

James VD

Jesus Juice

John D’Or

John Wayne Cardinal

John W.

Jonathan Soloman Oldfield

Jeremy Auger

JR

Jerry Perrault

Kevin D. King

Kurt Andre Seon

Leonard Cardinal

Len

LN

LW

MIN

Marianne

Pat Kozubik

Pretty Bird

RC

RH

Rhonda

Rick Caparelli

Rita

SG

SPON

Synthia

The Kid in the Blue Jacket

Timothy Green

Troubled

Willow

Theo

Turned to Dust

WC

I am thankful to all of those who shared their time, and completed the questionnaire.

This study is a compliment to the work in progress by Dong, Cooper, Salvaggio, Newton, Vandenberg et al. (work in progress), where both studies gather information about health status and the characteristics that are most strongly associated with the health status of inner city residents. Within the Edmonton context, health services are offered in a fragmented manner where many different providers offer disparate or overlapping services, and this study identifies opportunities to continue to enhance the delivery of health services to address a variety of underlying medical, behavioural and psychosocial needs.

Finally, I would like to thank the Edmonton Inner City Health Research and Education Network (EICHREN) for their financial support (see Appendix 1 for project budget). EICHREN is affiliated with the Royal Alexandra Hospital Foundation. This Foundation funds ground-breaking education, cutting-edge research, and next-generation technologies and facility enhancements; as well as supporting a number of specialized centers of health care excellence located at the Royal Alexandra Hospital campus.[1] The Foundation supports compassionate and innovative patient care, which aids in the improvement of healthcare outcomes for hundreds of thousands of people, including services for people living in poverty in the Edmonton inner city.

[1] www.albertahealthservices.ca

Increasing fiscal pressures on the health system challenge leaders to find more effective and efficient means of delivering health services which are targeted to areas demonstrating potential to improve health status and offset health services use – ultimately with the aim to optimize health within the population and health services use. As outlined in the study design, the detailed findings regarding demographic characteristics tell the story of a youthful population facing a disproportionate burden of the social determinants of health, significantly increased risk for morbidity and mortality, and increased health services use/need for access to health services.

Author Notes

This research was supported in part by a grant from the Royal Alexandra Hospital Foundation, Edmonton Inner City Health Research and Education Network (EICHREN).

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Chapter 1 – Introduction

In Canada, health care costs continue to rise at an unsustainable rate. In fact, over the past five years, the cost of delivering healthcare has outpaced the annual rate of inflation by nearly four percent (Levert, 2013). Despite recent growth, the Canadian Institute for Health Information reports that this growth pace is slowing from concerted efforts; "unlike in the past, they're not cutting programs as much as looking at improving productivity, reducing overhead, controlling compensation and seeking value-for-money initiatives" (CIHI, 2012). "Allocation of public health resources should be based, where feasible, on objective assessments of health status, burden of disease, injury and disability, their preventability, and related costs… expanding the repertoire of measures of the public's health is a critical step in targeting attention and resources to improve health, stemming mounting health care costs" (Thacker, Stroup, Carande-Kulis, Marks, Roy and Gerdberding, 2006, abstract).

Within the Alberta context, a set of core measures to understand health status and characteristics that are associated with the risk for death and disability (health status) is required so that resources can be aligned with needs, therefore, improving the health of 1% of individuals who account for 44% of healthcare expenditures (an average of $13,977 per year per person) (Alberta Health Services, 2012). This study takes place in the inner city of Edmonton, Alberta – where 63.2% (67/106) of individuals have at least a 26% predicted risk for one-

year mortality,[2] which is similar to the 1% of Albertans who account for a disproportionate amount of expenditures and have an annual death rate of 28% (Alberta Health Services, 2013). Shifting the health system towards a performance-based approach, which focuses on health outcomes and improving quality of care, is needed to improve patient health status and ultimately attain more sustainable healthcare expenditures. This study was developed in consultation with health service providers who are interested in 1) understanding the characteristics that are most strongly associated with health status of Edmonton's inner city residents so that health services can be further aligned to address these influential characteristics and improve health status; and 2) Alberta policy which supports interventions to address these determinants of health.

1.1 Context, objectives and knowledge dissemination

Previous research demonstrates that heavy health care use can be attributed to inadequate access to primary and preventive care, suboptimal (or entirely absent) social services, fragmented service delivery, and individual and system determinants of health that lead to or reinforce conditions of vulnerability – such as stigmatization (Malone, 1995); all of which ultimately contributes to frequent emergency department use that is associated with lack of access to a regular source of care, and a variety of underlying medical, behavioural and

[2] As assessed in this study using the Charlson Comorbidty Index Survey (Charlson, Charlson, Peterson, Marinopoulos, Briggs, et al., 2008); more detailed information is described in the Results chapter of this study

psychosocial needs that cannot be addressed in the Emergency Department (Agency for Healthcare Research and Quality, 2013). In the Edmonton area, Dong, Cooper, Salvaggio, Newton, Vandenberghe at al. (work in progress) are gathering information about health status and characteristics that affect the health status of those inner city residents who attend the inner city Royal Alexandra Hospital Emergency Department so that needs can be identified, and – where needed, programs and services can be offered to meet these identified needs. Health services use is driven by health needs and characteristics that are associated with health status, in a system where escalating costs can be mitigated by having the right service in the right place at the right time.

In Edmonton's inner city, services to meet the needs of inner city individuals and address health needs are offered by Alberta Health Services and a variety of inner city agencies. The Royal Alexandra Hospital Emergency Department, Boyle McCauley Health Centre, Boyle Street Community Services, and the Edmonton Inner City Health Research and Education Network – all serving Edmonton's inner city residents, have requested the author's assistance 1) to identify the characteristics that are most strongly associated with health status, and 2) to identify the health services and information that is most needed by Edmonton's inner city residents. To meet this need for information that can be used for planning services that align with the needs of Edmonton's inner city residents, this study sets out to achieve the following objectives:

- Objective 1 – To understand the characteristics that are most strongly associated with the health status of Edmonton's inner city residents.
- Objective 2 – To understand the types of health services and information that is most needed by Edmonton's inner city residents.
- Objective 3 – To understand the policy context that supports the delivery of programs and services to Edmonton's inner city residents.

The Royal Alexandra Hospital Emergency Department, Boyle McCauley Health Centre, Boyle Street Community Services, and the Edmonton Inner City Health Research and Education Network intend to use the information gathered in this study to understand the health status of individuals, and the characteristics that are most strongly associated with health status so that resources – where possible, can be aligned to meet these identified health needs. To sum up, policy-level considerations and recommendations to support delivery of programs and services in Edmonton's inner city community are presented in the final chapter.

1.2 Central hypotheses

Individuals residing in Edmonton's inner city 1) experience a lower health status and are characterized by a number of social determinants of health which negatively impact health status (characteristics associated with health), and 2) have increased health service use, considering general health service use as well as Royal Alexandra Hospital Emergency Department use.

1.3 Study questions

Information is reported to answer the following question and meet study Objective 1:

- What are the characteristics that are most strongly associated with the health status of Edmonton's inner city residents?

To address Objective 1, this study must also answer the following questions about health status and characteristics associated with health status:

- What is the health status of Edmonton's inner city residents?
- What is the age and gender distribution of Edmonton's inner city residents?
- To what extent do Edmonton's inner city residents experience a depressive disorder?
- What is the cultural identity of Edmonton's inner city residents?
- What is the highest level of education attained by Edmonton's inner city residents?
- What is the distribution of income level of Edmonton's inner city residents?
- What types of social supports are available to Edmonton's inner city residents?
- What is the legal status (i.e. under judicial restraint) of Edmonton's inner city residents?

- What is the employment status of Edmonton's inner city residents?
- What is the quality of food consumed by Edmonton's inner city residents?
- What is the housing status of Edmonton's inner city residents?
- To what extent do Edmonton's inner city residents report problematic alcohol use?
- To what extent do Edmonton's inner city residents report problematic drug use?
- To what extent do Edmonton's inner city residents use active and avoidant coping strategies to deal with life stressors?
- Considering the presence of diseases known to be associated with death due to chronic disease, what is the expected mortality rate of Edmonton's inner city residents?

To meet Objective 2, information is gathered to answer the following questions:

- What is the need for, and degree to which, Edmonton's inner city residents experience difficulty accessing health services?
- According to Edmonton's inner city residents, what is the need for and access to health information?

To meet Objective 1 and 2, information is also gathered to answer the following question:

- As frequent emergency department use is associated with increased need for health services as well as the lack of access to a regular source of care

(Malone, 1995), to what extent do Edmonton's inner city residents use Emergency Department Services?

To meet Objective 3, and presented in Chapter 4 as a discussion of key results, a broad review of Canadian, and more focused review of the Alberta policy cycle and context, is presented to identify policy-level options and recommendations that would address the key inner city health needs identified (as above to meet Objective 1 and 2):

- What are the Canadian, and more specifically Albertan, policy-level interventions and initiatives that can serve to address the key needs of Edmonton's inner city residents identified in this study?

1.4 Significance

"Increasingly, the decision about which evidence-based practices to implement arises from discussions occurring in the context of community collaboration, which brings together service providers, policy makers and researchers" (Rugs, Hills, Moore & Peters, 2011, p. 29). As recommended, this study brings together individuals from the Royal Alexandra Hospital Emergency Department, Boyle McCauley Health Centre, Boyle Street Community Services, the Edmonton Inner City Health Research and Education Network, and committee members (researchers) from the University of Alberta. This study fills an important information gap that can be used to support the planning and delivery of

programs and services for Edmonton's inner city residents by identifying those characteristics that are strongly associated with health status (Objective 1), the need for health services and information (Objective 2), and the current policy-level interventions that can help address the needs identified in this study (Objective 3).

This study serves to fill the following gaps in literature, specific to understanding the relationship between health status and the following characteristics of Edmonton's inner city residents (Objective 1):

- Age and gender,
- Depressive disorder,
- Cultural identity,
- Education attained,
- Income distribution,
- Social supports,
- Legal status (i.e. under judicial restraint),
- Employment status
- Quality of food consumed,
- Housing status,
- Problematic alcohol use,
- Problematic drug use,
- Coping strategies to deal with life stressors,
- Expected mortality rate associated with chronic disease, and

- Emergency Department use.

In addition, study stakeholders (community agencies and committee members) were interested in understanding the perceived need for health services and information, as this information is not currently available (Objective 2); and to understand the how policy can help meet the Edmonton's inner city residents needs identified in this study through existing local and provincial programs and services.

And finally, this study satisfies the requirements for a Master's in Public Health – Health Promotion.

1.5 Ethical approval

Ethical approval for this study was obtained from the Research Ethics Board Panel B at the University of Alberta (Edmonton).

Chapter 2 – Study Development

This study was developed by reviewing available literature to identify tools suitable for assessing health status and characteristics associated with health status so that those characteristics that are most strongly associated with health status can be identified (Objective 1). Existing evidence suggests that the characteristics associated with health status include *age*, *gender*, *cultural identity*, *education*, *income level*, *social supports (being in a relationship/living alone/having children)*, *legal status*, *employment status*, *quality of food consumed*, *housing status*, *problematic alcohol and drug use*, *strategies to cope with life stressors*, *chronic disease*, *depression* (Objective 1) and *access to health services and information* (Objective 2), and to understand the policy context across that can help meet the Edmonton's inner city residents needs identified in this study through existing local and provincial programs and services (Objective 3).

2.1 Health status assessment

Health status is assessed using two tools – the SF12v2® enhanced mental health version, and a 10 cm Visual Analogue Scale (VAS).[3] In the early 1990s, a grant-funded study ("Medical Outcomes Study") was a 4-year longitudinal study that studied health outcomes for over 23,000 chronically ill patients from 362

[3] A Visual Analogue Scale (VAS) is a 10 cm line – where one end represents the worst possible health and the other end represents the best possible health, and individuals are asked to mark an "X" on the line as a representation of their overall health.

medical practices and 161 mental health care providers in Boston, Chicago and Los Angeles, and through this study 36 questions that are the most predictive of death and disability were isolated; a 36-item short form (SF36) was constructed to survey health status (Ware & Sherbourne, 1992).

The SF12v2® is a health survey that measures functional health and well-being from the patient's point of view – which is an individual's ability to carry out regular day-today activities without any perceived limitations resulting from a burden to physical or emotional well-being (QualityMetric, 2014). The SF12v2® can be used to monitor population health, compare and analyze disease burden, and predict medical expenses (for example, QualityMetric, 2014), and includes a five-item mental health scale which is an effective first-stage screen for depression (Kosinski, Bjorner & Raju, 2009). Based on their experience that depression is common in inner city populations, QualityMetric advised the author to use the SF12v2® enhanced mental health version which includes three additional questions to assess a first-stage screen for depression; the addition of these questions enhances screening sensitivity and specificity.

First-stage depression screening means that at the time of taking the survey, the individual is evaluated to determine if they presented with characteristics similar to that of diagnosed depression – which results in a score (emotional well-being; Mental Component Score/MCS) that has been shown to have an association with a clinical diagnosis for depression and suggests further clinical review for possible diagnosis is merited. Using proprietary scoring

software, the author sent QualityMetric responses to these questions to create continuous scores for general functional health status (Short Form 6 Dimensions/SF6D), physical functional health status (Physical Component Score/PCS) and emotional well-being (Mental Component Score/MCS) that can be used as manipulated variables for correlational and regression analysis, to determine the degree to which health status is associated with characteristics that are known to be associated with health status. The scoring algorithms (and associated terms for these scores such as SF6D, PCS and MCS) are created by and proprietary to QualityMetric Inc.

Prior to this study, the author has not had the opportunity to pilot the use of the SF12v2® tool with a potentially low literacy and relatively more complex inner city population. As such, two assessments of health status are included in this study: the 10 cm VAS which requires very little literacy, and the SF12v2® which has been used in inner city populations but requires a higher level of literacy than the VAS (as described for example by Rosen, Smith & Reynolds III, 2008). Both tools result in a continuous score which can be used as the manipulated variable in correlation and regression analysis (Objective 1).

2.2 Characteristics associated with health

Existing literature identifies that the following characteristics are associated with health status: *age*, *gender*, *cultural identity*, *education*, *social*

supports (being in a relationship/having children), *legal status*, *housing*, *income level*, *employment*, *food intake*, *problematic alcohol and drug use*, *strategies to cope with life stressors*, *chronic disease*, *depression*, *access to health services,* and *access to health services and information*. Where possible, this study has incorporated validated tools to assess many of these characteristics; and, where validated tools were not available, worked with the study committee and community agencies to identify appropriate questions.

Age and gender. Numerous studies – such as Lundberg, Johannesson, Isacson & Borquist (1999) identify that age and gender affect health status (including SF12v2® scores). *Age* and *gender* are gathered in this study and provided to QualityMetric Inc. for the purposes of scoring the SF12v2® enhanced mental health version – to produce age-gender adjusted scores for general health (SF6D), physical health (PCS) and emotional well-being (MCS). In 2006, the Edmonton Census found that the average Edmontonian was 35.3 years old and 49.5% was male. Although the author was unable to find published information specific to Edmonton inner city residents, the Mental Health Commission of Canada (2014) reports, similar to others, that individuals residing in the inner city are more likely to be male and are on average younger than the broader population. Thus, having a means for creating an age-gender adjusted health status assessment is important.

Cultural identity. In large Canadian urban centers, First Nations people tend to be greatly over-represented (for example, Goering, Veldhuizen, Watson,

Adair, Kopp, et al., 2014). As noted by Wild (2006), a large proportion of inner city residents in Edmonton are First Nations. Recent research that examines inner city health status using the SF12v2® has found that health status is associated with being First Nations (Gadermann, Hubley, Russell & Palepu, 2013). This survey gathers information about cultural identity – using the ARC Questionnaire (Wild, 2006) categories of *white*, *First Nations*, *Métis*, and *other*; and analysis considers the association between health status and cultural identity.

Income level. "Economic indicators, such as income and education, are positively or negatively associated with health," and individuals who have a lower socioeconomic health status are more likely to use health services, and with greater intensity (Asada & Kephart, 2007, p.41; Lynch and Kaplan, 2000). "Populations with higher education and income levels are generally healthier and many use fewer (and different) health services" (CIHI, 2004, p. 93). In the Canadian health system and similarly funded health systems, "spending is distributed according to need" where this need for health services "is higher among lower income quintiles: less healthy people use more healthcare, and low income – associated with worse health status, is not a barrier to the use of tax-funded services… Simply put: the better off you are, the healthier you are – and the less healthcare you use" (CIHI, 2009, p. 48-9). To enable comparison between health status and wealth, this study gathers information about individual income, and monetary value of personal possessions using the validated ARC Questionnaire (Wild, 2006).

Education. The literature has a wealth of information to describe the positive impact of education on health. Canadians – such as those who reside in inner cities, have "lower incomes and fewer years of schooling [and] visit specialists at a lower rate than those with moderate or higher incomes and higher levels of education attained despite the existence of universal healthcare" (Dunlop, Coyte & McIsaac, 2000). This study's survey tool asks individuals to specify their education – including degree to which junior high, high school and post-secondary studies have been completed (using the ARC Questionnaire; Wild, 2006).

Social supports (being in a relationship, having children and living with others). "There is an extensive literature suggesting that marriage confers benefits to both men and women in the form of increased earning, better health and a longer life" (Averett, Argys & Sorkin, 2010, p. 600). Further, Averett, Argys and Sorkin (2010) have found that mental and physical health status, and health-related behaviour are positively affected by both marriage and cohabitation. "The positive effects of marriage on health result from improvements in mental health for women, as evidenced by the reduction in depressive symptoms, and improved health behaviours related to alcohol use" (Averett et al., 2010, p. 624). However, this recent research has also identified some adverse consequences of cohabitation and marriage; "for both men and women the presence of a partner is associated with an increase in BMI, and for women this translates into a significant increase in the incidence of overweight and obesity." For men, there is a lower probability

of regular exercise (Averett et al., 2010, p.624). Research also shows that these types of social supports influence why and how people seek healthcare. For example, men who have a partner are more likely to access health care within a given year, and having children is associated with more visits to the family doctor (Schafer, 2013, p. 176). In alignment with existing evidence, social supports – defined as being in a relationship, having children and/or living with others, is assessed in this study using the validated ARC Questionnaire (Wild, 2006), and the degree to which this characteristic is associated with health status is reported. Family, friends and acquaintances provide fundamental, tangible and psychological support when facing life challenges by providing advice, helping with tasks, and exchanging information and resources (Wang, Keown, Patten, Williams, Currie et al., 2008).

Legal status. Over recent decades, the burden of infectious and chronic diseases among those who are under judicial restraint has been well-documented. In 2002, a comprehensive review of available literature was completed by Watson, Stimpson and Hostick (2004), and, in alignment with publications since, the main health issues for those who are under judicial restraint include mental health issues, substance abuse and communicable diseases. Further, previous research has identified that health status (such as that assessed by the physical component of the SF12) is associated with having a criminal record (Watson, Stimpson, & Hostick, 2004). As such, this study gathers information about, and

explores the association between health and being under judicial restraint (using the ARC Questionnaire; Wild, 2006).

Housing. Recent research reports a relationship between housing and health status – where higher functional health status is associated with improved housing conditions; however, this current research points to a gap in information about the relationship between health and various characteristics and experiences of those who face housing insecurity (Hubley, Russell, Palepu & Hwang, 2012). This type of information is needed to help researchers, service providers and policy makers address the needs of this population, and may ultimately assist in examining the effectiveness of interventions to end homelessness and improve health among those who face housing insecurities (Hubley, Russell, Palepu & Hwang, 2012). Within this study, the association between health and housing is examined, contributing to filling the identified gap in literature.

Employment. According to Stewart (2001) – for example, individuals with impaired health have significantly longer unemployment spells. "Unemployed face lower opportunity costs as being ill reduces the chances of returning to the labour force [and] besides a poorer mental health, those who are unemployed have greater odds of suffering chronic illnesses" (Schneider & Schneider, 2009, pp. 5-6). To assess employment, this study incorporates a question from the ARC Questionnaire (Wild, 2006), as well as self-report questions that were identified by the study stakeholders (community agencies and study committee) to gather

information about employment status, working circumstances, and type of help needed (if any) to find a job.

Quality of food consumed. "A broad lack of food security results in hunger or reduced access; in malnutrition or ill health; in compromised quality or quantity of food supply…; and in restricted ability to control one's own food security… [and is] most deeply felt by the poor who suffer more hunger and ill health" and health care costs associated with a lack of food security (Seed, 2011, p. 32). Social inequality – such as is experienced by those residing in inner cities, is a key cause of food insecurity and consequently ill health in North America, (Dietitians of Canada, 2005; McIntyre & Tarasuk, 2002). This study incorporates questions from the Canadian Community Health Survey, and enhances these questions with additional items regarding source of food and types of foods (food groups) consumed on a typical day.

Problematic alcohol and drug use. The AUDIT has been designed to distinguish hazardous and harmful alcohol use (Babor, Higgins-Biddle, Saunders & Monteiro, 2001). This tool has been validated against harmful use and dependency outcomes, creating a cut-off value of 8 points for men and 6 points for women, indicating the presence of problematic drinking (Babor, Higgins-Biddle, Saunders & Monteiro, 2001). At the time of designing this tool, this cut-off value shows good sensitivity (.90) and specificity (.80) across countries and criteria (Babor et al., 2001). Since that time, the AUDIT has also been validated with inner city populations, demonstrating even better sensitivity (.96) and

specificity (.96) (Isaacson, Butler, Zacharek & Tzelepis, 1994). The AUDIT appears suitable for use with the study's target population.

The DUDIT has been designed to distinguish hazardous and harmful drug use (Berman, Bergman, Palmstierna & Schlyter, 2005). The cut-off scores for the DUDIT are 6 for men and 2 for women (Berman et al., 2005). The tool was developed and validated for use with individuals who have a high prevalence of drug use, and demonstrates a good level of sensitivity (.90), and specificity (.78) for both DSM-IV criteria[4] and ICD-10 diagnostic codes[5] within this at-risk population (Berman et al., 2005). "Sensitivity reflects the proportion of individuals identified by the DUDIT as dependent in the first stage of screening procedure, who later are confirmed as drug dependent by diagnostic interviews" (Berman et al., 2005, p. 9). Specificity reflects the proportion of individuals screened out as not dependent in the first stage, and who were later confirmed as not dependent (Berman et al., 2005). Over time, Berman, Bergman, Palmstierna and Schlyter (2005) continue to confirm good sensitivity and specificity with other at-risk, drug involved populations. The DUDIT appears suitable for use with the study's target population.

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[4] The American Psychiatric Association publishes the *Diagnostic and Statistical Manual of Mental Disorders* (DSM), which provides a common language and standard criteria for the classification of mental disorders. The last major revision was the fourth edition ("DSM-IV"), published in 1994.

[5] The International Statistical Classification of Diseases and Related Health Problems (most commonly known by the abbreviation ICD) provides codes to classify diseases and a wide variety of signs, symptoms, abnormal findings, complaints, social circumstances, and external causes of injury or disease. Under this system, every health condition can be assigned to a unique category, where many categories include a set of similar diseases.

In inferential analysis, both the AUDIT and DUDIT have demonstrated good levels of association with health status. For example, Hoxmark, Nivison & Winn (2010) found that 32% of the variance in mental distress, for a sample of at-risk women, could be explained by having 1) previously received psychiatric treatment; 2) a higher score on the DUDIT and AUDIT; and 3) using a larger number of substances.

Strategies to cope with life stressors. Ability to cope with life stressors is associated with health status more broadly – as well as specific to inner city health (for example, Hobfall & Schroder, 2001). The Brief COPE (Carver, 1997) survey measures several responses known to be relevant to effective and ineffective coping, demonstrating good psychometric properties. Using individual responses, continuous scores for active and avoidant coping can be calculated to establish the degree to which and how individuals tend to react to daily stressors and situations. Positive coping strategies are proposed to be the best ways to deal with stressful events, while negative coping strategies appear to be a psychological risk factor or marker for adverse responses to stressful life events (as defined in Holahan & Moos, 1987; scored using the methodology outlined in Permuth-Levine, 2007). Further, recent research has shown that individual's ability to cope with daily life stressors improves as they get older (Stevenson, Brodaty, Broyce & Byth, 2012). This Brief COPE questionnaire has demonstrated appropriate use for individuals who face multiple social and economic barriers to health (for example, Dressler,

1980), and is used to assess positive (active) and negative (avoidant) coping strategies.

Chronic disease. Low income characterizes many individuals who call the inner city their home; and, many studies have found inequities in health among income groups in Canada (for example, a study which compares the low-income cut off (LICO) to demonstrated increased risk for chronic disease; Fang, Kmetic, Millar & Drasic, 2009). "Health inequities are unfair and avoidable differences in health status among populations" (Fang, Kmetic, Millar & Drasic, 2009). In Canada, there is a publicly funded health care system, and yet we still see that people in the lower socioeconomic hierarchy have a shorter life expectancy (Wilkins, Tjepkema, Mustard & Choiniere, 2008) and are at higher their risk of developing chronic diseases (Raphael, 2003; Hayward & Colman, 2003; Health Officers Council of BC, 2008). Chronic disease has demonstrated significant burden to health.

Having worked in the health system with physicians and practitioners, the Charlson Comorbidity Questionnaire is a familiar tool that the author has used before; and it gathers self-reported patient information which had demonstrated good prediction of the one-year mortality for a patient who may have a range of comorbid conditions such as heart disease, AIDS or cancer (for a total of 22 conditions) (Katz, Chang, Sangha, Fossel & Bates, 1996). The questionnaire version (refer to accompanying patient survey tools) of the Charlson Comorbidity Index is a reproducible and valid version of the index, which is practical and

offers advantages over the traditional index which is calculated using charted clinical information (Katz et al., 1996). Comorbidity assessed through medical abstraction is expensive and often impractical (Katz et al., 1996). The test-retest reliability was 0.91 for the questionnaire and 0.92 for the chart-based Charlson index (Katz et al., 1996).

Depression. Depression is one of the most prevalent and treatable mental disorders presenting in general medical as well as specialist settings (for example, Kroenke, 2002). For several decades now, depression has shown a strong association with health status (risk for morbidity and mortality) (Silverstone, 1990), and increase in behaviours such as problematic alcohol use which cause significant health burden (increase in morbidity and mortality).

The Patient Health Questionnaire (PHQ) is a self-administered version of the PRIME-MD diagnostic instrument for common mental disorders (Kroenke, Spitzer & Williams, 2001). The PHQ-9 is the depression module, which scores each of the 9 DSM-IV criteria as "0" (not at all) to "3" (nearly every day). A PHQ-9 scores of $\geq$10 had a sensitivity of 88% and specificity of 88% for major depression (Kroenke et al., 2001). PHQ-9 scores of 5, 10, 15 and 20 represent mild, moderate, moderately severe and severe depression, respectively (Kroenke et al., 2001). The PHQ-9 has demonstrated both clinical and research utility, as well as providing a brief, reliable and valid measure of depression severity (Kroenke et al., 2001; Kroenke, 2002), and appears suitable for use with an inner

city population (for example, Booth, Walton, Barry, Cunningham, Chermack et al., 2010).

2.3 Access to health services

The author was unable to find a specific tool to assess access to health services. However, among others, Skeem, Markos, Tiemann and Manchak (2006) report that 3 months is an appropriate recall period for health service use within the target inner city population. Skeem et al. (2006) note that this recall method is subject to recall error, as are other retrospective methods. This method can be enhanced by using a calendar covering the relevant three month period and spending time to recall important events (such as holidays, important personal dates, birthdays). Using this calendar method, memory recall and data quality are improved (e.g., Axinn, Barber, & Ghimire, 1997; Belli, Shay, & Stafford, 2001; Caspi, Moffitt, Thornton, & Freedman, 1996; Freedman, Thornton, Camburn, Alwin, & Young-DeMarco, 1988; Horney & Marshall, 1991; Suchman & Jordan, 1990). Participants will be asked to construct a timeline of their health care service use during the three month recall period. The types of services were identified by those working in Edmonton's inner city agencies (namely Boyle Street Community Services and Boyle McCauley Health Centre); and include the *Emergency Department*, *clinic for day-to-day health needs*, *clinic for day-today emotional well-being*, *hospital*, *dentist*, *psychiatric hospital*, *problematic drug and alcohol use*, *birth control*, *sexually transmitted infections (STI)*, and *PAP tests –*

female only. The need for services, as well as the number of times a service was accessed, is gathered.

2.4 Access to health information

"Health communication campaigns often are mandated to reach those people who have the highest risks of mortality and morbidity from disease. Many of these efforts have been unsuccessful, leading health communicators to label [these audiences] as 'hard to reach'" (Freimuth & Mettger, 1990, p. 232). Study stakeholders are interested in understanding the most common mediums and types of information that is of interest to the study population, and as a result questions designed by the author and these stakeholders are included in the study tool.

2.5 Methods

The study methods identified include consideration of the *setting*, *target population*, *recruitment strategy*, *survey administration*, *ethical considerations*, *survey instruments*, *pilot testing*, and *data analysis*.

Study setting. Edmonton's inner city is home to many people living in poverty – who are often ignored, face discrimination and are marginalized by the larger society (Boyle Street Community Services, 2014). In late 2010, this research study was developed in consultation with the Royal Alexandra Hospital Emergency Department, Boyle McCauley Health Centre, Boyle Street

Community Services, and Edmonton Inner City Health Research and Education Network who are intimately aware of the social networks of the study population; and upon consultation with these stakeholders two sites were identified as being accessed by a majority of inner city residents and have the greatest potential to draw a representative sample of inner city residents, the Boyle McCauley Health Centre and Boyle Street Community Services; as such, the total sample for this study was drawn equally from each of these sites.

Target population. Participants were eligible to participate in the study if they were age 18 years or older, and attending the Boyle McCauley Health Centre or Boyle Street Community Services at the time the author was present and conducting survey interviews. Similar to previous work, Wild, Prakash, O'Connor, Taylor, Edwards et al. (2003), recruitment at these sites has received overwhelming interest, where a sign-up sheet was used to keep track of the number of individuals who were interested in the study; individuals on a first-come-first-serve basis were recruited into the study. Dong, Cooper, Salvaggio, Newton, Vandenberghe at al. (work in progress) are focusing on gathering similar information about health and characteristics that are associated with health status.

Recruitment strategy, survey administration and ethical considerations. Participants were recruited between September 2011 and February 2012. The author intended to and successfully recruited 110 individuals to participate in a survey interview. The sampling approach was adapted from the study design employed by Wild, Prakash, O'Connor, Edwards, et al. (2003). Recruitment took

place at both sites – the Boyle McCauley Health Centre and Boyle Street Community Services, with 55 surveys completed at each site. Participants were sampled using a convenience approach, where individuals who were present at the site were randomly asked to partake in the study as well as individuals self-selecting to take the survey while the researcher was available and onsite. The target number of 110 individuals was recruited from these sites.

Bias. Individuals who declined to participate were not included in the study, and were replaced by another individual. "Nonresponse bias can occur, for example, if a certain type of person is most likely [to participate] or to refuse [to participate] (say, those with the highest levels of education… or redheads, or women under the age 30, or individuals with strongly skewed views on the topic under consideration)… the problem would not be because the final sample was smaller than the initial sample (a lower response rate), but rather because the people who ended up in the final sample were somehow different from those in the initial sample (nonresponse bias)" (Newport, 2003). To increase response rates and representativeness of the sample (as described for example in a National Business Research Institute white paper, 2015), all eligible and willing participants provided informed consent and were reimbursed for their time ($20 CDN) for completing the survey. "Several studies have indicated that the use of incentives reduces to some extent item non-response and 'bad answers,' such as 'don't know' or 'no answer'… the data quality with an incentive, therefore, can be considered higher than if the incentive was not offered, as respondents have

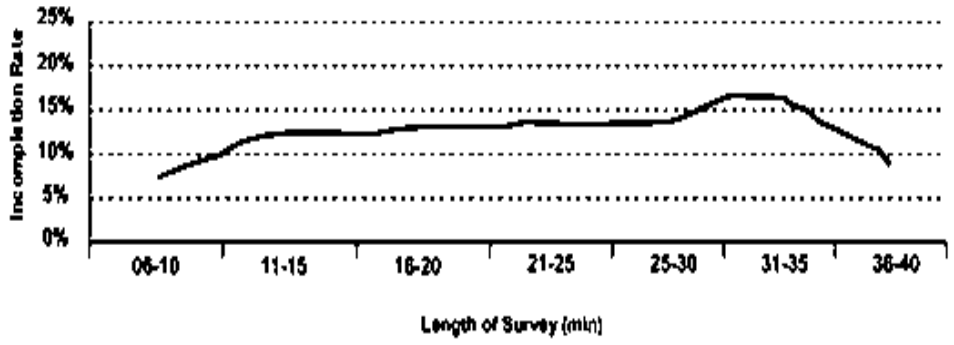
put more thought into answering the survey questions" (NBRI, 2015). "When presented with an incentive, people generally feel obligated to return the favor regardless of the type of gift they received. There is no indication of a group-specific effect of incentives" meaning that according to the white paper (NBRI, 2015) the results are not biased to one particular demographic over another.

Survey mode intended to reduce response bias. The author is a skilled and seasoned interviewer who has received education and training regarding response bias through various university and professional classes, with a total of fifteen years' academic and professional experience. Selected individuals were told about the nature of the study, and assessed for their willingness to participate in the study. Willing participants received a paper survey, and the author was available for questions (i.e. to clarify process). Respondents were initially encouraged to complete the tool independently, and were also subsequently offered assistance upon request. This assistance included reading aloud verbatim survey questions other than the SF12v2, and documenting responses verbatim for the respondent. Previous literature has demonstrated that in person administration (as opposed to pen and pencil administration) of the SF12v2® tools yields slightly more favourable ratings of health status (for example, Lungenhausen, Lange, Maier, Schaub, Trampisch et al, 2007); as the normative SF12v2® survey for the Edmonton area population was administered using pen and paper, the author only accepted submissions where the SF12v2® questions were completed independently to ensure study responses were comparable to the normative

sample, the broader Edmonton area population. Previous research would suggest that if any bias is present in the responses that were provided in a semi-structured interview format, it would slightly artificially inflate otherwise worse results; meaning that in the unlikely event that any response bias is present, it would likely further strengthen the results reported in this paper.

Response rates and missing data. There are several reasons why data may be missing. Responses may be missing because – for example, the respondent did not want to provide the information, was distracted, or declined due to personal distress. This is an important consideration, because this data set consists of responses to several survey instruments and someone who did not complete one instrument would be missing the subscores that were to be included in the regression analysis, although the absence of these subscores would not necessarily be related to the pattern or rational for individual missing items. Missing subscores were not included in the regression analysis. This is usually called listwise deletion, and is also known as complete case analysis (Howell, 2012). The impact of the length of the survey and response rates is well documented; for example, Lightspeed Research (2008) reviewed 443 projects, and demonstrated that the initial incompletion rate begins at just over 6% for a brief 5-10 minute survey, tops out at about 17% for a 31-35 minute survey, and returns to about 8% for a 36-40 minute survey as outlined in the figure below.

Figure 2-1. Incompletion rate by questionnaire length (Lightspeed Research, 2008)



The combined survey tool used in this study took about 45 minutes to complete.[6] In alignment with the Lightspeed Research study, the response rates reflect previous research – where for the most part at least 3.6% (105/110 surveys) of individuals responded to survey questions, and the total number of combined survey scores sets that could be not used for regression analysis due to missing items was 11.8% (13/110). Based on previous research regarding survey length and nonresponse rates, the nonresponse rate appears normal; specific response rates are reported for each question in the results section.

Response rates specific to qualitative data collection, and missing data. As the qualitative questions were looking for a positive report of an experience, it was interpreted that a none response indicated that this question was not relevant.

[6] Note: the author did not formally track completion time. The average completion time of 45 minutes per survey is the author's impression. The primary focus of this study was not to track time to complete; however, future studies may opt to examine and confirm the impact of survey length on completion rates.

At the time of gathering each survey or at the end of the interview, the author confirmed with respondents that all possible/relevant questions were answered.

Survey instrument. Data was obtained using a structured in-person survey interview. The survey instrument (Appendix 2) contains validated survey instruments that were selected on the basis of relevance to and previously successful use with inner city residents that have been previously validated where possible, and are relatively easy to administer to an inner city population. Open-ended questions were included to further gather information about the overall set of survey questions and the characteristics that are associated with health status (Objective 1). The study completed by Wild, Prakash, O'Connor, Edwards et al. (2003) and current work in progress by Dong, Cooper, Salvaggio, Newton, Vandenberghe et al. demonstrate the feasibility of sampling, recruitment, and survey tool administration strategies – using similar tools and approaches. Based on the author's experience during pilot testing, the survey tool was reformatted to improve clarity and open-ended questions were added to attain a greater understanding of characteristics that affect health (Objectives 1 and 2).

Appendix 3 provides an overview of all questions – including embedded survey tools and additional probing self-report questions that are employed in this study for all assessed variables/characteristics. Note, where possible – tools that have demonstrated good previous use with inner city populations have been given preference.

Pilot testing. The tool used in this study includes a number of previously validated tools. Although the combined questionnaire is fairly lengthy, a similar questionnaire, combining several validated tools, has recently and successfully been implemented in the Royal Alexandra Hospital Emergency Department with the same target population (Dong, Cooper, Salvalaggio, Newton, Vandenberghe, et al., work in progress). Similarly, the proposed tool piloted in this study gathers information on community-based populations. As reported by Committee Member Dr. Kathryn Dong (Dong, Cooper, Salvalaggio, Newton, Vandenberghe, et al., work in progress), this similar survey has been well received with few refusals to complete or partake: approximately, the similar survey has received a refusal rate of 18%, with most of these refusals due to pain or lengthy wait times to receive service in the Emergency Department. This combined tool used in this study has demonstrated content and face validity, in addition to the use of previously validated tools.

Data analysis. The main purpose of this study is to gather information on health status and characteristics associated with health status (Objective 1), where validated tools that create summary scores in some instances are used. To achieve Objective 1, the author presents frequencies of responses, as outlined Section 3.2 of Chapter 3, and outlines the significant relationships between unique manipulated (health status) and responding variables (characteristics associated with health status) by conducting correlation and linear regression analysis. Singular relationships between health status (SF6D, PCS, MCS) and

characteristics that are known to be associated with health status are initially assessed by examining correlations (see tables in Section 3.2 of Chapter 3).

Linear regression builds on this initial correlation analysis, and allows the author to identify and isolate the variables that have the greatest association with health status (as reported in Section 3.2 of this document). Preparing for linear regression analysis and in alignment with recommended analytical approaches, correlations ($p<.20$) are identified for use in forward, backward and stepwise linear regression; note, using a cut-point of $p<.05$ would likely result in too few variables.

Qualitative methods provide "rich data about real life people and situations and [are] more able to make sense of behavior and to understand behavior within its wider context" (Vaus, 2002, p. 5). Willms et al. (1990) and Miles and Huberman (1994) suggest starting with some general themes derived from reading the literature and adding more themes and subthemes as you go. "This is somewhere between inductive and deductive coding. You have a general idea of what you're after and know what at least some of the big themes are, but you're still in a discovery mode, so you let new themes emerge from the texts as you go along" (Bernard, 2013, p. 524). The "pile sorts" method to find common themes was applied as the approach taken for qualitative data analysis (Lincoln & Guba, 1989, pp. 347-9); the author looked for real quotes from the surveys that represented important and common topics in the data, and text with common topic areas was compiled and is reported together in the results section as common

themes (refer to Chapter 3 results presentation; and as described and recommended by Ryan & Bernard, 2003, p. 93). As outlined in Chapter 2, this study was informed by a comprehensive review of the literature, as well as the information needs of inner city agencies providing services to individuals at the Royal Alexandra Hospital Emergency Department, Boyle McCauley Health Centre, and Boyle Street Community Services; which resulted in the combined survey tool to assist in gathering information to support agency needs: this approach provides the framework for study development and subsequent data analysis.

This staged approach provides those planning and delivering health services with information about health status and associated characteristics, and by identifying those characteristics that have the largest association with health status. Ideally, targeted investment in areas which address the factors (determinants of health/characteristics associated with a burden to health status) with the greatest impact and/or association with health status can be made following this study. This document is completed with a review of national and provincial healthy public policy, possible interventions, and policy-level recommendations (refer to Chapter 4 discussion, which follows presentation of results in Chapter 3).

Chapter 3 – Results

The characteristics associated with health status include *depression screen*, *age* and *gender*, *cultural identity*, *education attainment*, *income distribution*, *social supports*, *legal status*, *employment status*, *quality of food*, *housing status*, *problematic alcohol use*, *problematic drug use*, *active and avoidant coping strategies*, *chronic disease and related mortality rate* and *use of the Emergency Department*. To meet Objective 1 and answer the question *What are the characteristics that are most strongly associated with the health status of Edmonton's inner city residents?*, the relationship (correlation results) between health status and these characteristics is considered, as well as the combined relationship between health status and all characteristics (linear regression results).

Stakeholders are interested in understanding the relationship between health status and various characteristics (Objective 1), and also *the need for services, and degree to which Edmonton's inner city residents experience difficulty accessing health services and information* (Objective 2). Stakeholders from Boyle McCauley Health Centre, Boyle Street Community Services and Edmonton Inner City Health Research and Education identified services and information that are of importance to residents of Edmonton's inner city. In this

study, participants' perception about the need for and access to these services and information is reported using a Likert scale and common themes.[7]

In alignment with the study design, results are reported as follows: *health status*, *characteristics associated with health status*, *relationship between health status and characteristics associated with health status,* and *need for and access to health services and health information.*

3.1 Health status

To answer the question *What is the health status of Edmonton's inner city residents?*, this study incorporated two assessments: a 10 cm visual analogue scale asking individuals to rate their health now and recent change in health over the past month; and the SF12v2® enhanced mental health version. Although a correlation between the visual analogue scale (VAS; 10 cm line) and SF12v2® scores exist, preliminary analysis revealed that correlations between the VAS scores and various variables may reflect the information gathered through this study, and not necessarily the relative health of the population. The study population is much younger, more male, and experiences increased mortality and risk for morbidity – when compared to the broader Edmonton population: as such, the VAS is not age or gender adjusted against a normative population and is reported for results purposes only; whereas, the SF12v2® enhanced mental health

[7] The questions that captured participants' perceptions about the need for and access to services were developed with stakeholders as specific information about Edmonton-based services was required.

scores are age and gender adjusted and provide comparison of scores against the general Edmonton area population, and are used for further correlation and regression analysis in the following sections of this document.

Visual Analogue Scale (VAS). As summarized in Table 3-1, 110 individuals provided a rating of their health within the past 30 days. By placing an "X" on a 10 cm line, where the very bottom of this line is the worst imaginable health and the top is the best imaginable health. On average, individuals indicated that their health was somewhere in the middle between *the best possible health* and *the worst possible health*, and had stayed the same over the period of the past month. There is no established or standard interpretation of these scores (such as those presented in Figures 3-2 and 3-3 for the SF12v2® tool), and often are used as the manipulated variable in studies that consider the relationships between the VAS score and determinants of health. The SF12v2® scores are preferred to the VAS scores, as these SF12v2® scores reflect variations in age and gender, and can be clinically interpreted (refer to Figures 3-2 and 3-3). As respondents had a sufficient level of literacy to successfully complete the SF12v2® tool, these VAS scores will not be used in regression analysis.

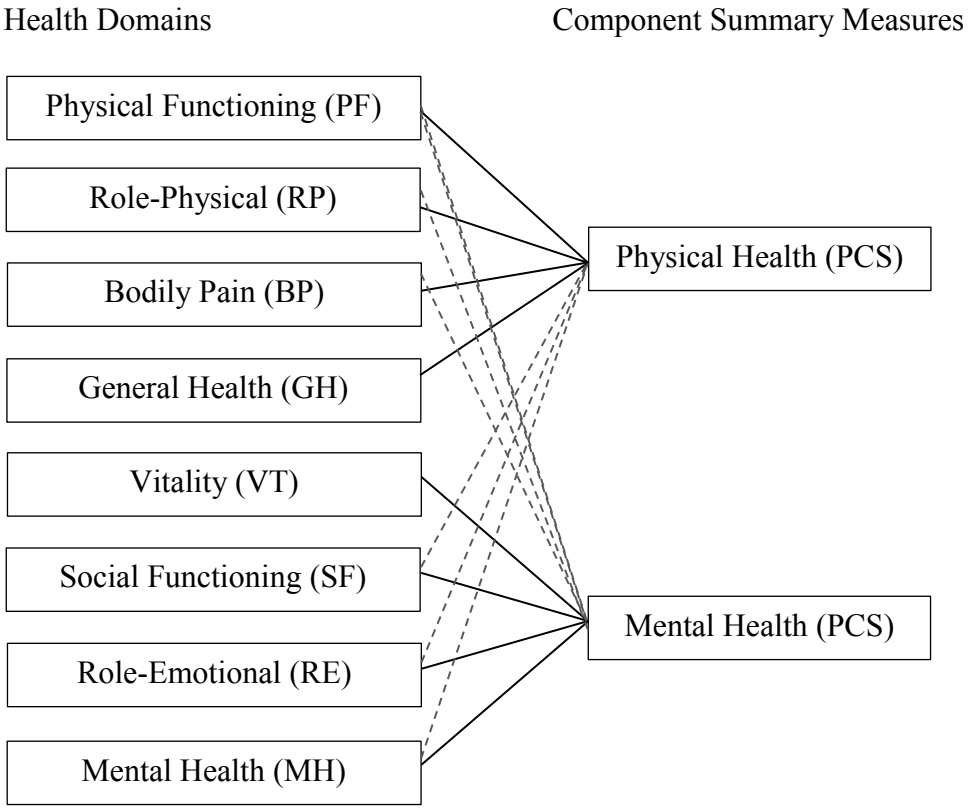
Table 3-1. Visual analogue scale (10 cm line) health status results

Descriptive Statistics for Visual Analogue Scale (VAS; 10 cm line)	Place an X somewhere on the line below to show how healthy you feel right now.	Place an X somewhere on the line below to show how healthy you have felt in the last month.
Count	110	110
Mean	4.967	4.810
Median[1]	4.900	4.750
Std. Deviation	2.5248	2.6930
Variance	6.375	7.252
Skewness	-.021	.066
Std. Error of Skewness	.230	.230
Minimum	.0	.0
Maximum	10.0	10.0

1 The interquartile range (IQR=Q3-Q1) is (IQR=6.70-3.05) 3.65.

SF12v2® – enhanced mental health. The SF12v2® provides information on functional health and well-being from the individual's point of view – providing information on eight health domains and two component summary measures, as outlined in Figure 3-1.

Figure 3-1. SF12v2® relationship between health domains and component summary scores*



**The solid lines represent core contributing health domains to the component summary measures; the dotted lines represent health domains which contribute to the component summary measures to a lesser extent*

General population norms for the Edmonton area provide a basis for meaningful comparisons across these scales. The benefit to norm-based scoring is that the study population is compared relative to the general population living in the Edmonton area. It is recommended that SF12v2® scores are interpreted on

norm-based scores (Mean=50, SD=10). In this way, the study population can be compared to the Edmonton area – through categories of at or above average, below average (1 SD below) or much below average (2 SD below). The raw SF12v2® responses were sent to QualityMetric Inc., and the norm-based scores were provided by QualityMetric Inc.

When compared to the Edmonton area population, the study group's health status is impaired. The distribution of the following scores are notably different when compared to Edmonton area norms – with a majority of individuals scoring at least 2 standard deviations (SD) below the Edmonton average score (Mean=50, SD=10): social functioning (67.9%, 56/109 at least 2 SD below), bodily pain (57.8%, 53/109 at least 2 SD below), role emotional (51.4%, 56/109 at least 2 SD below).

As seen in Figure 3-1 above, the health domain scores combine to create physical and mental health component scores. Individuals whose physical and mental health component scores (PCS and MCS; refer to Figures 3-2 and 3-3) are below average are at much greater risk for morbidity and mortality. Referring to Table 3-2 following, 72.7% of the study population has lower than average physical health component scores, and 69.4% have lower mental health component scores. The study population is at much greater risk – as outlined in Table 3-2 below, for morbidity and mortality, when compared to the Edmonton area norm.

Although individual responses to the 12-item SF12v2® questionnaire were gathered, these are not reported here, as the intent is to use the distribution of the summary scores (SF6D, PCS and MCS), and the association of the characteristics with these summary scores.

Table 3-2. SF12v2® distribution of health domain and component summary scores in study population

SF12v2® Scores	At or Above Norm % (count)	Below Norm* % (count)	Much Below Norm* % (count)	Total % (count)
Physical functioning (PF)	25.7% (28)	50.5% (55)	23.9% (26)	100.0% (109)
Role-physical (RP)	17.4% (19)	43.1% (47)	39.4% (43)	100.0% (109)
Bodily pain (BP)	22.0% (24)	20.2% (22)	57.8% (63)	100.0% (109)
General health (GH)	22.0% (24)	29.4% (32)	48.6% (53)	100.0% (109)
Vitality (VT)	44.0% (48)	28.4% (31)	37.5% (30)	100.0% (109)
Social functioning (SF)	16.5% (18)	15.6% (17)	67.9% (74)	100.0% (109)
Role emotional (RE)	20.2% (22)	28.4% (31)	51.4% (56)	100.0% (109)
Mental health (MH)	28.7% (31)	42.6% (46)	28.7% (31)	100.0% (108)
Physical health (PCS)	27.8% (30)	28.7% (31)	43.5% (47)	100.0% (108)
Mental Health (MCS)	30.6% (33)	36.1% (39)	33.3% (36)	100.0% (108)

**Below norm – more than 1 and less than 2 standard deviations below the norm; Much below norm – greater than 2 standard deviations below the norm*

Table 3-2 above shows, the study population has a significant health risk when compared to a similar age and gender sample within the Edmonton area. [8,9]

Table 3-3. Correlation of visual analogue scale (10 cm line) and SF12v2® health status measures (SF6D, PCS, MCS)

	Correlation analysis p≥.20* *Correlation (p-value)*		
Health status – 10cm Visual Analogue Scale (n)	**SF6D**	**PCS**	**MCS**
Current health (108)	.405* (.000)	.377* (.000)	.340* (.000)
Health within past month (108)	.532* (.000)	.344* (.000)	.439* (.000)

At the time that this study was proposed, an approach comparing high-low health status against dependent variables was considered. Despite good alignment between VAS and SF12v2, the approach to comparing high-low health status was not appropriate for this study as the majority of age-gender (SF12v2) normative scores (SF6D) suggest that the study population is significantly compromised. A sample size larger than what was obtained in this study would be required to compare high-low health status and determinants of health; as well, an identified and suitable cut-point for high-low health status using the VAS would need to be established (has not yet been established).

[8] The scores in Table 3-2 are standardized against the Edmonton area population – meaning in the Edmonton area population, we would expect to see about half of individuals with health above the normative value (standardized z-score) and half below the normative value (standardized z-score). In the study sample, we consistently see an overwhelming majority in the different health domains below the normative score for men and women of similar ages.

[9] At or above average scores include those scores that are near a standardized z-score; below average are those scores at least one standard deviation below the z-score but not more than two standard deviations below; and much below average includes those scores that are at or lower than two standard deviations below the standardized z-score.

Further, the average age of the study population is considerably younger than the Edmonton area average. In analysis of the relationships between variables, the SF12v2® physical (PCS) and emotional wellbeing (MCS) scores were used over the VAS scores, as the MCS and PCS scores are normative, and provide a better opportunity to compare the study population to individuals of similar age and gender living in the Edmonton area.

This study incorporated two health status assessment tools: a visual analogue scale (a 10 cm line) and the SF12v2® mental health enhanced version. Information gathered with the SF12v2® tool was used to answer the study question *What is the health status of Edmonton's inner city residents?* This SF12v2® tool is appropriate for use with the Edmonton inner city population, and was completed by 109 study participants. Since 2005, the author has been involved with the SF12 tools through various professional roles. Through these various professional experiences, the author is aware that a minimum level of literacy is required to independently complete this questionnaire. As such a visual analogue scale (10 cm line) was also incorporated into this study as an assessment of health status, just in case the SF12v2® was deemed not appropriate for use with Edmonton's inner city residents; appropriateness of the survey tool was implicitly confirmed and assumed as 109/110 of individuals independently completed the survey tool, and whose scores are subsequently reported. The SF12v2® and visual analogue scale are overlapping constructs (refer to Table 3-3 in Section 3.1 of Chapter 3), and the SF12v2® outperforms the visual analogue

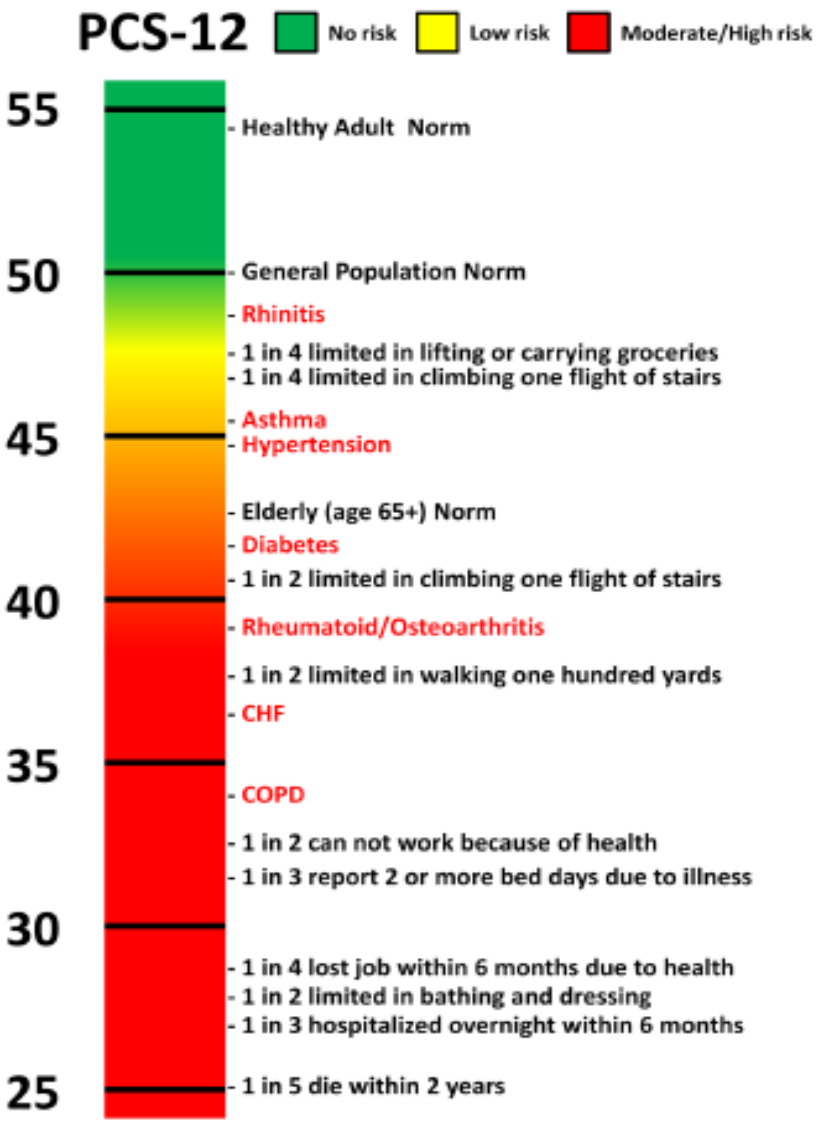
scale by producing scores reported relative to women and men of similar ages living in the Edmonton area (refer to footnotes 6 and 7 in Section 3.1 Chapter 3). Further, this tool separates out health status as related constructs of general health, physical health and emotional well-being, and so determinants of these different constructs are better understood and increase the likelihood of targeted interventions (refer to following Figures 3-2 and 3-3).

As the SF12v2® has shown good use with the study population, the author recommends that the next iteration of the combined health assessment tool exclude the visual analogue scale (10-cm VAS questions). The SF12v2® was easy to use with this inner city population, and showed value in understanding the characteristics that are associated with burden to general health, physical health and emotional well-being.

Severely compromised inner city physical health status. 72.7% (79/108) of the study population has lower than average physical health component scores (Scores <40).

Figure 3-2. Clinical interpretation of physical health (PCS) scores*

(QualityMetric, 2013)



** Note: 1 standard deviation has been standardized to 10 points using z-scores where 50 represents the average normative population score*

Inner city residents are depressed. The study design included the PHQ9 tool to gather self-reported perceptions of depressive symptoms, and answer the question *To what extent do Edmonton's inner city residents experience a depressive disorder?* In Alberta about 11.9% of the population is receiving treatment for depression (Alberta Health and Wellness, 2006, p. 56).The PHQ9 scores can be interpreted to identify *mild major depressive disorder* and *moderate depressive disorder* which are categories of depression as outlined in the DSM-IV. In this study, 69.4% (75/108) of Edmonton's inner city residents have lower mental health component scores (at least 1 standard deviation below average; scores<40), and 67.9% (66/105) of individuals screen positive for depressive symptoms (scores<42). The prevalence of depressive symptoms is alarmingly high within the context of the Edmonton area population where about 20% of individuals who took the normative SF12v2® survey screened positive for depressive symptoms (Fung, 2010; unpublished study) and treated population prevalence for depression of 11.9% within the broader Alberta population (Alberta Health and Wellness, 2006, p. 56). A well-established body of previous research – including such studies as the one completed by Zink, Withers, Dedmon, Hemandez, Jackman, et al. (2012), confirms that the PHQ9 and SF12v2® MCS scores are comparable and overlapping constructs. In addition to the PHQ9, the SF12v2® emotional well-being score (MCS) provides a first-stage depression screen relative to other men and women of similar age.

At the time of this study's development, the Alberta Health Services scoring guide for the SF12v2® tool, which includes information to assist in interpreting the severity of the emotional well-being scores (MCS) presented in Figure 3-3, was not yet published (published in 2013). For example, Alberta Health Services used the SF12v2® tool as a depression screening tool as part of a pilot study of the Weight Wise program (Fung, 2010; unpublished study results) as follows:

- 54% (119/220) of patients screened positive for depression at baseline (at the time of the initial Weight Wise appointment);
- 30% (66/220) of patients screened positive for depression (using MCS score as a first-stage screen for depression) at 6 and 12 month follow-up; and
- 48% (106/220) of patients showed a statistically significant improvement in physical health at 6 and 12 month follow-up.

As described in Table 3-4 below, previous studies have found that a positive screen for depression using the SF12v2® tools is associated with poor outcomes (Ware, Kosinski, Bjorner, Turner-Bowker, Gandek & Maruish, 2007; Fleischman, Cohen, Manning & Kosinski, 2006: refer to Table 3-4 following):

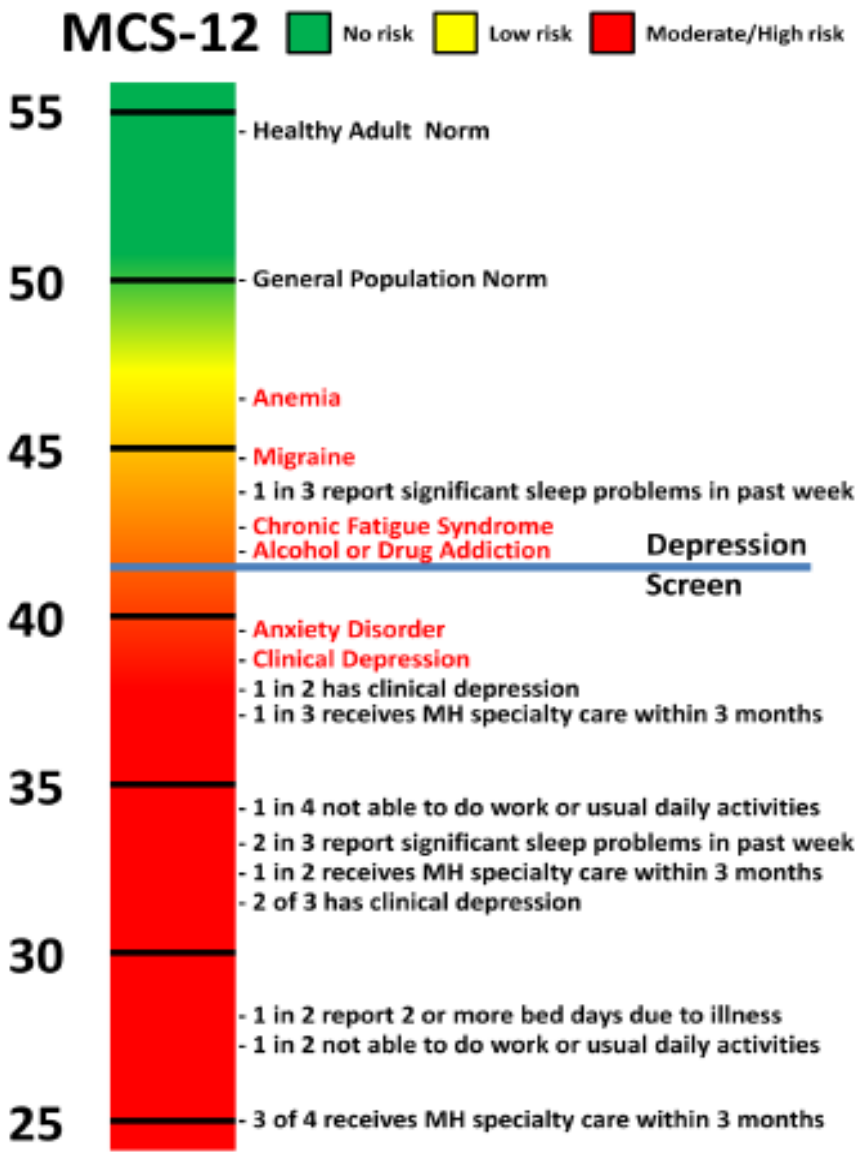
Table 3-4. Examples of outcomes associated with SF12v2® physical health status scores

Outcome	Physical health score between 1 and 2 standard deviations below average (30-34 points)	Physical health score more than 2 standard deviations below average (30-34 points)
Job loss within 6 months following survey	26%	60%
Hospitalization within 6 months following survey	19%	44%
Mortality within 2 years following survey	15%	24%

The SF12v2® tool can be used to establish a clinical baseline and follow-up score for physical and emotional well-being (refer to Figures 3-2 and 3-3), which can be used to objectively assess improvement in health that is associated with an offset to death and disability. Future clinical work should validate the prevalence of depression in Edmonton's inner city, and if confirmed an immediate investment should be made to enhance the accessibility to these services as 42.6% (27/47) of individuals who need access report difficulty accessing a clinic for day-to-day emotional well-being, and 51.6% (16/31) report difficulty accessing a psychiatric hospital.

Figure 3-3. Clinical interpretation of emotional well-being (MCS) scores*

(QualityMetric, 2013)



** Note: 1 standard deviation has been standardized to 10 points using z-scores where 50 represents the average normative population score; and "MH" is an abbreviation for "mental health"*

48.9% (45/92) of individuals self-identified a need for services to support day-to-day emotional well-being, and 40% (28/70) reported difficulty accessing these services; where – on average, the study population currently accesses these types of resources 23.5 times per year (range 1-500 times per year). As the prevalence for depressive symptoms is so high, a screen for depressive symptoms should be provided to Edmonton's inner city residents. Resources aimed to improve these symptoms should be increased as depressive symptoms are disproportionately high, and individuals struggle to access programs and services to address depressive symptoms.

3.2 Characteristics associated with health status

In this section, results pertaining to each of the characteristics assessed (as laid out in Appendix 3) are presented, and characteristics that are eligible for inclusion in regression modeling are identified. Further, within the context of each assessment, recommendations for future research, implications to health services delivery, and health services planning and policy are identified.

Depression. *Depression* has long been associated with a lower health status, and *depression* more broadly is more likely experienced by those residing in the inner city. As such, this study sought to understand *To what extent do Edmonton's inner city residents experience a depressive disorder?* The PHQ9 provides a first-stage screen for depressed mood, which requires further clinical assessment and validation of a depression diagnosis. Scores are calculated using

individuals responses – allowing individuals to be sorted into four groups: *may not require depression treatment* (score 0-4), *mild depressive disorder* (5-14), *moderate depressive disorder* (15-19), and *severe major depressive disorder* (20 or higher). Using the PHQ9, 62.9% (66/105) individuals screened positive for depressive symptoms – including 18.1% (19/105) individuals who screened positive for moderate or severe depressive disorder (see table 3-5 following). This rate of depressive symptoms (62.9%) is extraordinarily high compared to Alberta which reported a treated population prevalence of 11.9% for depression in 2006 (Alberta Health and Wellness, 2006, p. 56) which is similar to a 3-year study that found 11.8% of Albertans sought services for depression over a three year period (Slomp, Bland, Boyce & Bytg, 2012).

Table 3-5. Distribution of depression screening (PHQ9) scores

Depression Screening Results (PHQ9 Score)	**Total % (count)**
May not need depression treatment (0-4)	37.1% (39)
Mild major depressive disorder (5-14)*	44.8% (47)
Moderate major depressive disorder (15-19)*	11.4% (12)
Severe major depressive disorder (20 or higher)	6.7% (7)
Total	100.0% (105)

** "mild major depressive disorder" and "moderate major depressive disorder" are clinical categories of depression outlined in the DSM-IV*

There is an association between the PHQ9 Depression Screen and the general (functional) health status (SF6D) (-.377), indicating a decline in health status as the incidence of a positive depression screen increases. Further, 42.6% (27/47) of individuals who need access report difficulty accessing a clinic for day-

to-day emotional well-being, and 51.6% (16/31) report difficulty accessing a psychiatric hospital (refer to Section 3.4 for more detailed findings).

Future studies should consider replacing the PHQ9 with the SF12v2® first-stage screen for depression as both tools appear to assess similar characteristics; however, the PHQ9 tool features a depression screen as well as a functional impairment[10] item specific to this tool. As outlined in Table 3-6 below, there is an association between a decline in mental (functional) health status (MCS) and an increasingly severe depression screen (PHQ9) (-.541), indicating good alignment between the PHQ9 and SF12v2® MCS scores. Further, as assessed by the PHQ9 tool, there is a good correlation between a positive depression screen and impaired ability to carry out daily activities .365 (sig. .000; n=105); this means that individuals who screen positive for depressive symptoms are also likely to experience difficulty carrying out daily tasks as a result of depressive symptoms.

Table 3-6. Depression differences (PHQ9 depression screen and functional impairment) and health status (SF6D, PCS, MCS)

	Correlation analysis p≥.20* *Correlation (p-value)*		
Depression screen (PHQ9) (n)	**SF6D**	**PCS**	**MCS**
Positive depression screen (105)	-.377* (.000)	-.066 (.502)	-.541* (.000)
Depression impairing ability to carry out daily activities (106)	-.204* (.036)	-.177* (.069)	-.165* (.092)

[10] *Functional impairment* is refers to diminished ability to carry out day to day tasks and activities.

Age and gender. *Age* and *gender* have long been associated with health status. As such, this study sought to understand *What is the age and gender distribution of Edmonton's inner city residents?* As outlined in Table 3-7 below, most individuals were between the ages of eighteen and fifty-four years old (min. 18 years, max. 75 years, mean 42.0 years, standard deviation 11.4 years). Significantly more men than women were present (71.8%, 79/110 men; 28.2%, 31/110 women).

Table 3-7. By gender, distribution of age groupings

Age Groupings	Gender % (count)		Total % (count)
	Male	Female	
18-34	18.2% (20)	7.3% (8)	25.5% (28)
35-44	19.1% (21)	12.7% (14)	31.8% (35)
45-54	25.5% (28)	5.5% (6)	30.9% (34)
55-64	9.1% (10)	1.8% (2)	10.9% (12)
75+	.0% (0)	.9% (1)	.9% (1)
Total	**71.8% (79)**	**28.2% (31)**	**100.0% (110)**

When examining the relationship between age and gender, and health status, there are some apparent patterns. As outlined in Table 3-8 below, there is a general decline in general (SF6D) and physical health (PCS), and a slight improvement in emotional well-being as the population ages. The relationship between gender and health is not significant for the purposes of this study.

Table 3-8. Age and gender, and health status (SF6D, PCS, MCS)

Characteristic (n)	Correlation analysis *p≥.20 *Correlation (p-value)*		
	SF6D	**PCS**	**MCS**
Age (108)	-.125* (.196)	-.337* (.000)	.085 (.383)
Gender (108) *(Note: responses coded as 1 – male, 2 – female)*	-.061 (.533)	-.075 (.440)	-.015 (.877)

Age and gender are important as these characteristics can be used to develop meaningful health promotion messages. For example, Keller and Lehmann (2008) conducted a meta-analysis effective health communications, and report that age and gender are important in designing effective health messages: particularly regarding an emphasis on physical versus social consequences, integrating emotional tones, defining health goals, and likelihood of involvement in physical activities.

Cultural identity. Cultural identity, especially being of First Nations or Métis, is associated with compromised health status. This study sought to understand *What is the cultural identity of Edmonton's inner city residents?* More than half of individuals identified most strongly with Aboriginal groups (34.5%, 38 First Nations; 24.5%, 27 Métis) as presented in Table 3-9. Six individuals provided clarification on an *"other cultural identity"* – including *Canadian (2)*, *China (1)*, *Inuit(1)*, *Nigerian (1)* and *South American (1)*.

Table 3-9. Cultural identity

Cultural group most identified with…	**Total % (count)**
White	30.9% (34)
First Nations	34.5% (38)
Métis	24.5% (27)
Other	10.0% (11)
Total	**100.0% (110)**

However, when considering the relationship between health status (general, physical and emotional well-being) and cultural identity (as outlined in Table 3-10 below), the only relationship which is significant enough to enter into the linear regression modelling (sig. p≥.20) is a slight burden to general health (SF6D; -.146, p .131).

Table 3-10. Cultural identity and health status (SF6D, PCS, MCS)

	Correlation analysis *p≥.20 *Correlation (p-value)*		
Characteristic (n)	**SF6D**	**PCS**	**MCS**
First Nations/ Métis (108) *(Note: responses coded as 1 – White/Other, 2 – First Nations/ Métis)*	-.146* (.131)	-.087 (.373)	-.008 (.937)
Multilingualism (108) *(Note: 1 – speaks one language, 2 – can speak more than one language)*	.076 (.432)	-.002 (.986)	.054 (.576)

As outlined in Table 3-11, individuals were asked to identify all of the languages in which a conversation could occur– providing the options of *English*, *French*, *Arabic*, *Chinese*, *Cree*, *German*, *Hungarian*, *Italian*, *Persian*, *Polish*, *Portuguese*, *Punjabi*, *Spanish*, *Tagalog*, *Ukranian*, *Vietnamese*, and *Other*. All

individuals were required to speak English in order to complete the survey; the interviewer notes that in the recruitment sites all individuals present were able to speak English and that language spoken did not present as a barrier to recruitment. Nine individuals spoke an additional language – including *Cantonese* (1), *Czech* (1), *Dene* (1), *Inuik* (1), *Norwegian* (1), *Japanese* (1), *Celtic* (1), *Swedish* (1), and *Yoruba* (1).

Table 3-11. Languages spoken

Language Proficiency ***Able to conduct a conversation in…***	**Total % (count)**
English	100.0% (110)
Cree	22.7% (25)
French	10.0% (11)
Spanish	3.6% (4)
German	3.6% (4)
Chinese	2.7% (3)
Arabic	.9% (1)
Italian	.9% (1)
Ukrainian	.9% (1)
Vietnamese	.9% (1)
Other	7.3% (8)
Total	**100.0% (110)**

Further, Smylie, Kaplan-Myrth, McShane & Pikwakanagan First Nation[11] (2008) have found that the uptake of health information is done more effectively when First Nations and Métis processes of knowledge creation, dissemination and use are incorporated into the approach taken. Further, besides *speaking English (100.0%, 110/110)*, the second most common language spoken is *Cree (22.7%,*

[11] Note: "Pikwakanagan First Nation" is named as an author in the article publication.

25/110). Taken together, health messages aimed to improve the health of the individual should be tailored to increase the likelihood that they will be noticed and make a difference to health behaviours.

Education. Many previous studies have affirmed the relationship between *level of education attainment*, and *health status*, and so this study set out to: 1) answer the question *What is the highest level of education attained by Edmonton's inner city residents?*, and 2) consider how responses to this question are associated with health status (SF6D, PCS and MCS). Most individuals have obtained at least some high school education (86.3%, 95/110) – with about half achieving high school education or more (51.9%, 57/110) (refer to Table 3-12 below for more detailed results). Compared to the general Alberta population, this level of education attainment is slightly lower than the provincial average where in 2012, 52.0% of Albertans aged 15 and over had a post-secondary qualification (Alberta Innovation and Advanced Education, 2014); this is slightly different than achieving high school education or more, but is the only publicly available information.

Table 3-12. By Gender, highest level of education obtained

Highest Level of Education	Gender % (count)		Total % (count)
	Male	**Female**	
Less than junior high school	.9% (1)	1.8% (2)	2.7% (3)
Some junior high school	4.5% (5)	.9% (1)	5.5% (6)
Completed junior high school	4.5% (5)	.9% (1)	5.5% (6)
Some high school	28.2% (31)	10.0% (11)	38.2% (42)
Completed high school	19.1% (21)	8.2% (9)	27.3% (30)
Some college	5.5% (6)	1.8% (2)	7.3% (8)
Completed college	5.5% (6)	.0% (0)	5.5% (6)
Some undergraduate university	2.7% (3)	1.8% (2)	4.5% (5)
Completed undergraduate university	.9% (1)	.9% (1)	1.8% (2)
Some graduate university	.0% (0)	.9% (1)	.9% (1)
Completed graduate university	.0% (0)	.9% (1)	.9% (1)
Total	**71.8% (79)**	**28.2% (31)**	**100.0% (110)**

The relationship between gender and highest level of education is not significant (.087 Pearson Correlation, .366 significance, n=110), suggesting that education and gender are not strongly associated within the study population. Further, there is no significant relationship between health and level of education (referring to the results presented in Table 3-13 below), which suggests that – unlike previous studies of other similar populations, level of educational attainment has no effect on the health of Edmonton's inner city residents.

Table 3-13. Relationship between level of education attained and health status (SF6D, PCS, MCS)

Characteristic (n)	Correlation analysis *p≥.20 *Correlation (p-value)*		
	SF6D	**PCS**	**MCS**
Completed junior high (108)	.076 (.432)	.031 (.752)	-.083 (.395)
Completed high school (108)	.042 (.669)	.024 (.809)	.047 (.628)
Participated in post-secondary program (108)	.091 (.349)	.085 (.384)	.009 (.925)

Employment status. Information was gathered to answer the question *What is the employment status of Edmonton's inner city residents?* Only 21.1% (23/109) of individuals reported being legally employed within the past 30 days (refer to Table 3-14 below). Almost half of all individuals reported that they could not work *due to sickness or injury* (48.1%, 51/106).

Table 3-14. Employment status during the past 30 days*

Employment circumstance in past 30 days…	Total % (count)
Full time (paid work or self-employment)	11.3% (12)
Part time (paid work or self-employment)	9.4% (10)
Unable to work (due to sickness or injury)	48.1% (51)
Retired	4.7% (5)
Unemployed or looking for work	26.4% (28)

**106 individuals provided information about their employment status*

An association between physical health and general health status (SF6D) was observed (-.294, .002); this finding indicates a relationship where – as health

declines, the likelihood of employment becomes lower (refer to Table 3-15 below). However, when the relative strength of this correlation is considered within the context of all characteristics associated with health, employment status is not a major contributing factor associated with health status. Although health and employment are not related, study participants offered many possible ways to increase the likelihood of being employed, which includes various supports that are outlined in the next few pages. These improvements may be considered important for improving health status, and also as a means to improve individuals' participation in the labour market.

Table 3-15. Employment status*during the past 30 days and health status (SF6D, MCS, PCS)

	Correlation analysis *p≥.20 *Correlation (p-value)*		
Characteristic (n)	**SF6D**	**PCS**	**MCS**
Employed within the past 30 days (1 - yes or 0 - no) (107)	-.294* (.002)	-.189* (.051)	-.183* (.060)

For individuals who were unemployed or looking for work (includes individuals unable to work due to sickness or injury, and those unemployed and wanting to work), 53.6% (37/69) perceived that some type of assistance or training would assist them in getting back to work. Thirty-four individuals identified some type of assistance to get back to work, and nineteen individuals identified some type of training that would help them obtain desired employment.

However, at times some of these combined feedback on assistance and training. As such, all responses to these questions were grouped together, and are reported in light of assistance to obtain employment and training to obtain employment.

The following types of assistance are perceived to help individuals obtain employment: assistance finding a position within a field that aligned with previous skills and experience, including heavy equipment operator, concrete labourer, construction and general labourer, roofer, drywaller, forklift operator, trailer loader and unloader, carpenter, landscaper, transportation, safety, soldier, security officer, guard work, engineering job (individual was a landed immigrant and had a Master's in Engineering), and homecare support aide; office, clerical and/or administrative work, including data entry, general office/computer work, and office administration; and general help including housekeeping, camp jobs, kitchen help, and snow shovelling. In addition, a few *other types of responses* were received: one individual expressed a sincere desire to be rich. He felt that having access to unlimited financial resources would allow him to pursue personal interests in writing, and to become a screenplay writer. A second individual identified experience as a member of a local band, and – if provided the opportunity, would like once again to enter to local music scene of Edmonton. In general, many individuals were able to identify skills, experience and training that would enable them to obtain employment.

A small group of individuals also identified special considerations which were barriers to obtaining employment, including learning disabilities associated

with numeracy, physical limitations (such as bad knees, back problems, HIV and Hepatitis C), pregnancy, and poor schooling. In addition, one individual provided the following comment: he felt that homelessness in itself was a form of employment that took up much of an individual's time – through activities such as moving from shelter to shelter throughout the day to obtaining meals. This individual recognized that going to work for the day was difficult, as he would have to opt out of eating meals provided by the shelters when he went to work. This individual suggested that bag meals be provided to those who are just starting a new form of employment, as this would help them make the transition from relying on the shelters for meals to self-sufficiency.

Another individual identified a further barrier to trades employment. When living in shelters, individuals often carry all of their personal belongings with them. Many trades jobs require tools and steel toed boots. This individual identified that it is often difficult to take these items with you. He suggested that lockers be made available to individuals, so that tools and steel toe boots could be stored somewhere.

One individual longed for work that provided a pension. He wanted to ensure that as he became more stable that he was able to maintain financial independence within his working career, as well as into his retirement.

Individuals also identified that *employment counselling*, and *training and education* would assist them in finding desired employment, including:

- Employment counselling including information and networking for employment opportunities; employment agencies – connecting employers with those looking for temporary, seasonal and part/full-time work; places to find labour and construction employment; job lottery for temporary work[12]; and job seeking assistance – such as resume creation, career counselling; and
- Training and education including computer training; tickets (trades) – such as safety tickets for the oil sands (i.e., Suncor) including WHMIS, CPR, H2S, TDS, working on the rigs, and heavy equipment operator; and finish high school; daycare worker; Keyano College; driving school (Class 1 driver); and CAD/CAM Tech.

Many of these resources exist in the community, and, as the current study did not gather information on the reason why these cannot be accessed, future studies may want to explore access relative to the need for these resources.

Income. Previous research has shown that individuals who have lower incomes are more likely to experience a burden to health status. As such, this study seeks to: 1) answer the question *What is the distribution of income level of Edmonton's inner city residents?*, and 2) to compare responses to this question with health status. Information was gathered on monthly income. As set out in Table 3-16, nearly half (46.2%, 50/108) of all individuals reported a monthly income of less than $499 – with 22.2% (24/108) making less than $99 in the past

[12] Some of the inner city agencies have partnered with temporary employment agencies. On scheduled mornings, employment agencies come to the agency looking for a set number of individuals with general labour skills and sometimes requiring steel toed boots. Individuals interested in working that day put their name into a lottery, and are selected on a first come first served basis.

month. When asked to specify the total income, individuals were asked to include all possible sources of income (such as assistance cheques, legal and illegal sources of income, etc.).

Table 3-16. Total income in the past 30 days*

Total income in past 30 days…(estimated annual income)	**Total % (count)**
$0-99 *($0-1188)*	22.2% (24)
$100-499 *($1200-5988)*	24.1% (26)
$500-999 *($6000-11988)*	26.9% (29)
$1000-1999 *($12,000-23,988)*	20.4% (22)
$2000-$2999 *($24,000-35,988)*	5.6% (6)
$3000+ *($36,000+)*	.9% (1)

*107 individuals provided information about total monthly income earned (both legal and illegal means with no identification of income source); annual income is this monthly income multiplied by 12 months, and assumes no seasonal influence

When considering the distribution of reported income within this population, a comparison can be made within the Alberta context. Statistics Canada (2009) provides information (described in Table 3-17 below) on Albertans who fall below the Low-income cut-off, the poorest 20% of the population, 2nd, 3rd and 4th income quintiles, and the richest 20% incomes. When comparing Table 3-16 above with Table 3-17 below, most individuals report an income well within the poorest 20% of the Alberta population, with a large proportion of individuals participating in this study reporting income below the LICO (low-income cut-off; Statistics Canada, 2009).

Table 3-17. Alberta income data, non-elderly families, 2009*

LICO and Income Quintiles	Average Market Income ($)	Average Total Income ($)	Average After-Tax Income ($)	Number of Families
Families below LICO	8,300	13,300	12,800	148,000
Poorest 20%	14,200	18,600	17,600	264,000
2nd Quintile	40,400	45,700	40,900	264,000
3rd Quintile	68,000	73,200	63,200	264,000
4th Quintile	103,800	108,200	90,100	264,000
Richest 20%	206,800	209,800	164,900	264,000
All Families	**86,700**	**91,100**	**75,400**	**1,321,000**

**Statistics Canada, Income Statistics Division, Survey of Labor and Income Dynamics Custom Tabulation (2009)*

There was no significant correlation between health status (SF6D: -.039 Pearson correlation; .690 significance; n=106), physical health (PCS: -.100; .308; 106), and mental health (MCS: .032; .746, 106) and annual income, in general. Further testing was completed – using an estimate of the LICO where below $11,988 was considered low income, to understand the relationship between health status (SF6D, PCS, MCS) and LICO; unlike previously published literature, no significant relationship between health and income was observed.

Table 3-18. Alberta income data and health status (SF6D, PCS, MCS)

Characteristic (n)	Correlation analysis *p≥.20 *Correlation (p-value)*		
	SF6D	**PCS**	**MCS**
Annual income less than $11988 (107)	-.014 (.886)	-.006 (.953)	-.001 (.991)

As previously assessed by Wild et al. (2006), value of personal possessions is relatively small for vulnerable individuals residing in the inner city, and that this value is often associated with health status. Study participants were asked to estimate the total value for all personal possessions, and almost three-quarters of individuals reported that all personal possessions were valued at less than $500 as set out in Table 3-19 below.

Table 3-19. Value of personal possessions

Total value of personal possessions	Total % (count)
$0-99	50.9% (56)
$100-499	23.6% (26)
$500-999	8.2% (9)
$1000-1999	3.6% (4)
$2000-2999	3.6% (4)
$3000+	7.3% (8)
Total	**100.0% (107)**

Social supports. For the purposes of this study, social supports include *being in a relationship*, *having children* and *living with others*. Within this context, this study gathers information to answer the question *What types of social supports are available to Edmonton's inner city residents?*

Most individuals were *not in a relationship* (69.1%, 76/110), or *living common law* or as *married* (21.8%, 24/110) (refer to Table 3-20 below for greater detail). Comparatively, in Alberta in 2014, 40.4% of individuals were married, 4.9% were divorced, 2.4% were separated, 41.0% were single (never legally married), 7.8% were living common law (Statistics Canada, 2014). Previous studies have shown that having a close network of family, friends and acquaintances is associated with improved physical health and emotional well-being, and a decreased in risk of mortality over time (Berkman, Glass, Brisette & Seeman, 2000; and House, Landis & Umberson, 1988), and further these social networks can reduce the effects of poverty on health through providing assistance in finding a job or moving off of social assistance (Granovetter, 1973).

Table 3-20. Relationship status

Relationship Status	**Total % (count)**
Single *Never married, widowed, separated, divorced*	69.1% (76)
Legally married	.9% (1)
Common-law/living as married	21.8% (24)
Same sex couple	.9% (1)
No response	.0% (0)
Other	7.3% (8)
Total	**100.0% (110)**

However, in the current study the relationship between health status and the status of *being in a relationship* is not significant (SF6D .087 Pearson Correlation, .366 significance, n=110; PCS -.042, .668, 108; MCS -.033, .731, 108), suggesting that

unlike findings from previous studies relationship status and health status are not strongly associated within the study population.

Most often, individuals lived with others – for example, with *other residents* (53.2%, 58/109), *friends* (45.9%, 50/109) and *family* (24.8%, 27/109). However, a significant number of individuals lived alone (22.0%, 24/109). Of note, more individuals in the study population (21.8%, 24/110) live in common law relationships than Albertans (13.6%), more live with children (30.8%) and fewer live alone (9.6%) (Alberta Treasury Board and Finance, 2012, pp. 1 and 2). This trend for marital status of the study population is much different than the broader Edmonton population.

Table 3-21. Kinds of places people lived with during the past 30 days

People lived with during the past 30 days…	**Total % (count)**
Other residents (for example, shelter)	53.2% (58)
Friends	45.9% (50)
Family	24.8% (27)
Alone	22.0% (24)
Partner	14.7% (16)
Roommate(s)	9.2% (10)
Children	8.3% (9)
Other	2.8% (3)
Total	**100.0% (109)***

*All responses from 109 individuals were included, and individuals may have lived in more than one place within the past 30 days

Most individuals had dependents (75.5%, 83/110) – with about one-fifth currently responsible for dependents (18.1%, 15/83). Children may not require

care as they have grown, or are looked after by an alternative custodian; however, no information to determine this was gathered in this study.

Table 3-22. Number of dependents and responsibility to look after dependents

Number of Dependents	Do you look after them? % (count)		Total % (count)
	Yes	No	
1	4.8% (4)	22.9% (19)	27.7% (23)
2	4.8% (4)	18.1% (15)	22.9% (19)
3	4.8% (4)	16.9% (14)	21.7% (18)
4	1.2% (1)	9.6% (8)	10.8% (9)
5	.0% (0)	6.0% (5)	6.0% (5)
6	1.2% (1)	.0% (0)	1.2% (1)
7	.0% (0)	2.4% (2)	2.4% (2)
8	.0% (0)	1.2% (1)	1.2% (1)
9	.0% (0)	2.4% (2)	2.4% (2)
10	.0% (0)	1.2% (1)	1.2% (1)
12	1.2% (1)	.0% (0)	1.2% (1)
13	.0% (0)	1.2% (1)	1.2% (1)
Total	**18.1% (15)**	**81.9% (68)**	**100.0% (83)**

Having children and spending time with one's children is associated with health status. However, only characteristics that apply to most of those surveyed are considered in the next step of linear regression analysis, and this means that only *having children* (general health/SF6D, correlation .212, p .028; physical health/PCS, correlation .288, p .003) was included in regression modeling.

Table 3-23. Having children and health status (SF6D, PCS, MCS)

Characteristic (n)	Correlation analysis *p≥.20 *Correlation (p-value)*		
	SF6D	**PCS**	**MCS**
Having children ever (yes or no) (108)	.212* (.028)	.288* (.003)	.084 (.387)
Number of children (82)**	-.005 (.967)	-.097 (.387)	.048 (.666)
Looking after children (yes or no) (83)**	-.066 (.555)	-.076 (.497)	-.056 (.615)
% of time spent looking after children in past 30 days (16)**	.556* (.025)	.560* (.024)	.316 (.233)

***Characteristics that do not apply to most individuals are not included in linear regression analysis*

In regression analysis, the only characteristic that was predictive of general health (SF6D) and physical health (PCS) was having children, and this characteristic acted as a protective factor or indicated that healthier individuals are more likely to have children. According to Australia's Commonwealth Department of Health and Aged Care, "[f]or some individuals, there will be no impact of any particular factor or combination of factors, while for other people a particular factor or combination of factors may be very protective of their mental health" – and this includes responsibilities such as parenting (CDHAC, 2000, p. 14). Future studies should expand on these findings by furthering investigation into the association between health and having children, looking at perceived loneliness for those who live alone, and the overall impact of the quality of the personal social network.

As outlined in Table 3-24 below, there are significant relationships between general health (SF6D) and living with family and children; physical health (PCS) and living with children; and mental health and living with family and children.

Table 3-24. Living with others and health status (SF6D, PCS, MCS)

Characteristic (n)	Correlation analysis *p≥.20 *Correlation (p-value)*		
	SF6D	**PCS**	**MCS**
Calculated variable: Lives with others (yes or no) (107)**	.091 (.353)	-.063 (.516)	.135* (.166)
Alone (yes or no) (109)	-.113 (.242)	-.060 (.538)	-.136* (.160)
Family (yes or no) (108)	.231* (.016)	.151 (.118)	.213* (.027)
Friends (yes or no) (108)	-.112 (.250)	-.142* (.143)	.008 (.935)
Partner (yes or no) (108)	-.046 (.636)	-.069 (.477)	.071 (.468)
Roommates (yes or no) (108)	-.036 (.714)	.010 (.918)	.016 (.868)
Other residents (ex. Shelter) (yes or no) (108)	.026 (.787)	.033 (.734)	-.072 (.459)
Children (yes or no) (108)	.319* (.001)	.286* (.003)	.201* (.037)
Other (yes or no) (108)	.029 (.769)	.004 (.963)	.033 (.738)

***Note: for the purposes of regression analysis a summary variable was calculated: 1 – lives with others (any of friends, family, partner, roommates, other residents, children, other) and 2 – alone all of the time to demonstrate the degree to which social supports are available to the individual*

Housing status. Contributors to the design of this study – namely staff from Boyle McCauley Health Centre, Boyle Street Community Services and the

Royal Alexandra Hospital were interested in the housing status of Edmonton's inner city residents as very little information about broad housing needs is known. As such, information on housing status was gathered, including *time lived in the Edmonton area*, *locations lived other than Edmonton*, *opportunity to travel outside of the Edmonton area*, *number of locations slept within the past month*; this information was gathered to answer the question *What is the housing status of Edmonton's inner city residents?* As outlined in Table 3-25 below, most individuals had lived in Edmonton for 20 years or more (min. less than one year, max. 55 years, mean 22.0 years).

Table 3-25. Time lived in Edmonton

Number of Year Lived in Edmonton	**Total % (count)**
5 years or less	15.1% (16)
6-10 years	12.3% (13)
11-15 years	13.2% (14)
16-20 years	11.3% (12)
21 years or more	48.1% (51)
Total	**100.0% (106)***

There is no significant relationship between health status and length of time lived in Edmonton (SF6D -.032 correlation, .746 significance, n=104; PCS -.147, .138, 104; MCS .077, .436, 104).

Most individuals had lived in a place other than Edmonton – with seventy-one providing a previous location of residence (refer to Table 3-26 following for greater detail).

Table 3-26. Locations lived other than Edmonton

Previous Location Lived in…	**Total % (count)**
Alberta	62.0% (44)
Saskatchewan	11.3% (8)
British Columbia	8.5% (6)
Ontario	5.6% (4)
Manitoba	5.6% (4)
Other Country	5.6% (4)
Nova Scotia	2.8% (2)
North West Territories	2.8% (2)
Yukon	2.8% (2)
Total	**100.0% (71)**

Only 71 individuals indicated a previous location of residence other than Edmonton, and may have indicated more than one previous location. As such, a comparison for health status by location of previous residence cannot be computed, and future studies should aim to gather a more representative sample so that a true province of original residence can be established. Note, as the number of individuals who have lived outside of the province is small, this characteristic was not included in regression analysis as it is not relevant to most individuals.

Individuals indicated that they slept at a hostel or shelter (50.9%, 54/106), a friend's place (44.3%, 47/106), their own apartment or house (38.7%, 41/106), or on the street (outside) (24.5%, 26/106). Remarkably, this survey was held during the coldest seasons of the year (fall and winter), and a full 24.5% of individuals reported sleeping outside for an average of 9.8 of 30 total nights. The most common, stable accommodation, appears to be their own apartment or house

(38.7%, 47/106 individuals; 23.6/30 nights), with jail or prison (9.4%, 10/106 individuals; 18.6/30 nights), or a hostel or shelter (50.9%, 54/106 individuals; 16.1/30 nights) being the next most common (refer to Table 3-27 below).

Table 3-27. Locations slept in the past 30 days

Locations Slept in the Past 30 Days	**Locations slept in the past 30 days… % (count)**	**Nights spent in location… Average # of nights (count)**
Hostel or shelter	49.5% (54)	16.1 (50)
Friend's place	43.1% (47)	6.9 (39)
Own apartment or house	37.6% (41)	23.6 (39)
Street	23.9% (26)	9.8 (21)
Family member's place	12.8% (14)	7.8 (13)
Couch surfing	12.8% (14)	12.7 (12)
Boarding house, hotel or furnished room	11.9% (13)	6.6 (10)
Didn't sleep (walk all night)	11.9% (13)	2.6 (11)
Hospital	11.9% (13)	6.2 (12)
Jail or prison	9.2% (10)	18.6 (7)
Detox	7.3% (8)	3.0 (4)
Camps (squatting)	6.4% (7)	10.5 (6)
Reserve or settlement	2.8% (3)	12.0 (2)
Transition housing	1.8% (2)	1.5 (2)
Working out of town (rigs or camps)	.9% (1)	20.0 (1)
Other	6.4% (7)	13.6 (7)
Total	**100.0% (109)***	**106****

**109 individuals provided information about residence, and may have indicated more than one location slept*

***106 individuals provided information about number of nights slept in location, and may have indicated more than one location slept; not all individuals provided number of nights slept for all locations*

As outlined in Table 3-28, most individuals slept in two or more locations during the past 30 days (61.5%, 67/109), with the average number of places slept in 30 day period being 2.5 (min. 2, max. 8).

Table 3-28. Number of locations slept in the past 30 days

Number of Locations Slept in the Past 30 Days	Total % (count)
1	38.5% (42)
2	22.0% (24)
3	12.8% (14)
4	12.8% (14)
5	8.2% (9)
6	2.7% (3)
7	1.8% (2)
8	.9% (1)
Total	**100.0% (109)***

*109 individuals provided information about residence, and may have indicated more than one location slept

Although there was no significant relationship found between health status (SF6D, PCS, MCS) and the increasing number of places slept (i.e., 1, 2, 3, and so on), the relationship between general health status (SF6D) and sleeping in more than one place (i.e., 1 or more places) was significant and included in linear regression analysis (-.167 Pearson correlation; .086 significance; n=107).

Legal status. Information was gathered to answer the question *What is the legal status (i.e. under judicial restraint) of Edmonton's inner city residents?* Most individuals were *under no judicial restraint* (63.6%, 70/110). However, a noted combined number *were on probation* (4.5%, 5/110), *under bail, pending*

charges or warrant (9.1%, 10/110), *had fines* (17.3%, 19/110), or had some *other type (unknown to interviewer)* of legal status (7.3%, 8/110). Individuals could hold more than one type of legal status at a time.

Table 3-29. Current legal status

Current legal status	**Total % (count)**
Under no judicial restraint	63.6% (70)
Fines	17.3% (19)
Under bail, pending charges or warrant	9.1% (10)
On probation	4.5% (5)
On parole	1.8% (2)
Serving a conditional or community sentence	.9% (1)
Other	7.3% (8)
Total	**100.0% (110)**

For the purposes of regression analysis, the relationships between health status and being under judicial restraint were strong enough to be entered into the model (SF6D -.184 correlation, .057 significance, n=107; PCS -.085, .386, 107; MCS -.131, .177, 107), but when compared within the context of the relative strength of association between significant characteristics and health using regression analysis, legal status was not strongly associated with health status.

Quality of food. Information was gathered to answer the question *What is the quality of food consumed by Edmonton's inner city residents?* 68.8% of individuals rated their diet as *mostly healthy* (30.3%, 33/109) or *sometimes healthy* (38.5%, 42/109). 25.7% (28/109) reported that their diet was not healthy.

Table 3-30. Perceived quality of diet

Description of diet	Total % (count)
Mostly healthy	30.3% (33)
Sometimes healthy	38.5% (42)
Not healthy	25.7% (28)
Not sure	5.5% (6)
Total	**100.0% (109)**

Interestingly, a perceived healthy diet is conversely associated with general health (SF6D), physical health (PCS) and better emotional well-being (MCS) (Table 3-32 below). Although statistically significant, the relationship between emotional well-being and healthy diet was not included in the regression analysis, as intuitively the direction of this relationship does not make sense and more likely reflects a response bias where individuals reported they ate healthier than they really do. When examining the quality of food consumed within the most recent 24 hours (see Tables 3-32 and 3-33 following), it is apparent that this statistical relationship is not likely and is more likely a reflection of the measurement tool used. As such, it is recommended that future studies incorporate a tool which has been validated for to assess inner city residents' quality of diet.

Table 3-31. Healthy diet and health status (SF6D, MCS, PCS)

Characteristic (n)	Correlation analysis *p≥.20 *Correlation (p-value)*		
	SF6D	**PCS**	**MCS**
Healthy diet (yes or no; yes – mostly healthy, and no – sometimes healthy, not healthy) (107)	-.411* (.169)	.169* (.081)	.362* (.000)

Individuals identified where food is regularly obtained – with common places including grocery stores, convenience stores, fast food restaurants, and shelters. *Shelters* was not an option on the survey in this iteration, but was reported as a common explanation of other, indicating the responses to this question could be expanded to include this option. Other common explanations of *other* included named organizations – such as Boyle Street Community Services, Hope Mission, Mustard Seed, Bissell Centre and the food bank; several other types of organizations were also referenced, including drop ins, soup and food lines, senior centre and drop in, hostel, treatment centre, restaurants, pharmacies and work. A couple of individuals also identified a person as a primary source of food, including *friends* and *girlfriend*.

Table 3-32. Source of food*

Source of food	**Total % (count)***
Grocery stores	51.8% (57)
Convenience stores	36.4% (40)
Fast food restaurants	35.5% (39)
Dumpster diving[13]	10.0% (11)
Other *Food bank (2), donations (1), treatment centre (1), people who give out food (1), pharmacy (1), restaurants (1), girlfriend (1), takeout (1), shelters (31)*	65.5% (72)

*Individuals may have selected more than one option. 110 individuals had the opportunity to identify food source(s).

[13] The term *dumpster diving* is used in the survey tool, and refers to picking and consuming food that was disposed of in the garbage.

Quality of food was assessed in two ways – frequency of eating various types of foods generally (Table 3-33), and recall of types of foods eaten within the past twenty-four hours (Table 3-34).

Table 3-33. Frequency of eating various types of foods

Type of Food (count)	**Never % (count)***	**Once a week % (count)***	**2-6 times a week % (count)***	**Once a day % (count)***	**More than once a day % (count)***
Fruit (fresh, frozen or tinned) (109)	2.8% (3)	22.9% (25)	31.2% (34)	29.4% (32)	13.8% (15)
Vegetables (fresh, frozen or tinned) (109)	2.8% (3)	23.9% (26)	29.4% (32)	30.3% (33)	13.8% (15)
Bread, pasta, rice potatoes (not chips) (109)	2.8% (2)	13.8% (8)	34.9% (34)	32.1% (43)	16.5% (22)
Meat, chicken, fish (and meat alternatives) (109)	2.8% (3)	13.8% (15)	34.9% (38)	32.1% (35)	16.5% (18)
Fried food (including chips) (108)	12.0% (13)	32.4% (35)	30.6% (33)	17.6% (19)	7.4% (8)
Convenience food (microwaveable) (108)	23.1% (25)	35.2% (38)	20.4% (22)	12.0% (13)	9.3% (10)

**of total*

Interestingly, individuals reported generally eating the various food groups *less than daily* or *once daily* (Table 3-33 above), which are notably not eaten within the most recent twenty-four hour period (as outlined in Table 3-34 below). Further categories beyond those captured by the ARC questionnaire emerged

(Wild, 2006), including water, alcohol, milk and milk products, meal replacements and extras — such as coffee, tea, jam, candy, chocolate); future studies examining the study population may want to revise the questionnaire to capture this information.

Table 3-34. Frequency of eating various types of foods within most recent twenty-four hours

Type of Food	Breakfast (84)*	Mid-morning Snack (41)	Lunch (70)	Mid-afternoon Snack (46)	Supper (84)	Late evening Snack (48)
Food not eaten**	20.8% (22)*	61.3% (65)	34.0% (36)	56.6% (60)	20.8% (22)	54.7% (58)
Food type not clearly defined**	3.6% (3)	.0% (0)	34.3% (24)	23.9% (11)	10.7% (9)	10.4% (5)
Fruit (fresh, frozen or tinned)	29.8% (25)	29.3% (12)	19.6% (9)	14.3% (5)	12.0% (9)	20.9% (9)
Vegetables (fresh, frozen or tinned)	3.7% (3)	2.4% (1)	39.1% (18)	5.7% (2)	86.7% (65)	2.3% (1)
Bread, pasta, rice potatoes (not chips)	82.7% (67)	29.3% (12)	82.6% (38)	37.1% (13)	65.3% (49)	53.5% (23)
Meat, chicken, fish (and meat alternatives)	46.9% (38)	12.2% (5)	39.1%(18)	20.0% (7)	76.0% (57)	30.2% (13)
Fried food (including chips)	.0% (0)	7.3% (3)	13.0% (6)	8.6% (3)	4.0% (3)	4.7% (2)
Convenience food (microwaveable)	.0% (0)	.0% (0)	.0% (0)	.0% (0)	.0% (0)	.0% (0)
Water	8.6% (7)	2.4% (1)	8.7% (4)	11.4% (4)	5.3% (4)	4.7% (2)
Alcohol	7.4% (6)	12.2% (5)	13.0% (6)	11.4% (4)	4.0% (3)	11.6% (5)
Milk and milk products	18.5% (15)	7.3% (3)	17.4% (8)	2.9% (1)	13.3% (10)	9.3% (4)
Meal replacement (Glucerna, Ensure)	4.9% (4)	2.4% (1)	6.5% (3)	2.9% (1)	1.3% (1)	2.3% (1)
Extras (for example, coffee, tea, jam, candy, chocolate)	53.1% (43)	29.3% (12)	37.0% (17)	42.9% (15)	29.3% (22)	51.2% (22)

*Total % (count)

**not included in % calculations for those who ate/drank - includes undefined types of food such as soup, stir fry

*** # of individuals who reported eating/drinking at meal time

As seen in the table above, one-fifth to one-third of individuals reported missing at least one of breakfast, lunch or dinner meals. Note: breakfast was considered to be the first meal during waking hours, lunch was second and supper third; mid-morning snack was a meal occurring between breakfast and lunch, mid-afternoon snack occurring after lunch and before supper, and late evening snack occurring after supper-time. During the survey questionnaire interview, individuals often reported relying on shelters for food, and certain individuals have been banned from attending certain facilities due to behavioural issues (as described for example in the study by Munro, Reynolds and Plamondon, 2013). Complicating the food security issue, at various times throughout the day shelter food is not available, and certain individuals have been banned from attending certain facilities due to behavioural issues. Further, some individuals reported consuming alcohol as the sole element of their meal (where this phenomenon is described to as drunkorexia in the literature; as described for example by Koegel, Burnam and Farr, 1990, and Haas, 2015). Milk and milk products are not readily available and/or consumed regularly. A few meal replacements are provided through inner city agencies, but are often reserved for those who have difficulty obtaining regular food or enough food. Many individuals consumed non-nutritive foods – such as coffee, tea, jam, candy and chocolate for one-third to a half of all meals consumed. In general, quality of food and access to food can be greatly improved in the inner city, as many people go without food as they are not able to

find meals or lack access to meals that are balanced and nutritious (as described in greater detail for example in Ilochi, 2011).

In this study, portion sizes and specific information about foods was not obtained. Results presented provide a preliminary understanding of the quality of diet, which appears to be insufficient in key areas. There is notable variability between the self-rated frequency and self-recall for previous 24 hours in the degree to which each food group is consumed. Therefore, the specific types and access to food will not be included in the correlation and regression analysis – only the self-rated quality of diet will be included. Future studies could seek to confirm and elaborate on this preliminary understanding of food quality and health.

Problematic alcohol use. This study sough to answer the question *To what extent do Edmonton's inner city residents report problematic alcohol use?* 68% (74/109) of respondents reported use of alcohol (as defined in the AUDIT tool). According to the AUDIT scoring system, problematic alcohol use is likely in 61% (45/74) of individuals – characterized by one or more of the following *multiple servings on a typical day or occasion*, *inability to stop consumption*, *neglecting obligations*, *dependency*, *feelings of guilt or remorse*, *loss of awareness or ability to remember events*, and *harm to self or others*.

Of note, there is no significant association between a *problematic screen for alcohol use* (problematic alcohol use likely) and *health status* (refer to Table 3-35 below).

Table 3-35. Problematic alcohol use and health status (SF6D, PCS, MCS)

Characteristic (n)	Correlation analysis *p≥.20 *Correlation (p-value)*		
	SF6D	**PCS**	**MCS**
Problematic alcohol use (108)	-.118 (.224)	.026 (.787)	.046 (.634)

General health status (SF6D) and problematic alcohol use approached significance (correlation -.118, p .224) but did not reach significance for inclusion in the regression analysis completed for this study. These findings suggest that access to programs for problematic alcohol use be improved. Future studies may want to re-examine this relationship between general health and problematic alcohol use, and the relative strength of this association when compared with other characteristics.

Problematic drug use. This study sought to answer the question *To what extent do Edmonton's inner city residents report problematic drug use?* 67% (72/108) of respondents reported use of drugs other than alcohol (as outlined in accompanying DUDIT list of possible substances). Using the DUDIT cutoffs to identify problematic drug use, problematic drug use is likely in 88% (63/72) of individuals – characterized by one or more of the following: *heavy influence*, *longing*, *inability to stop taking drugs*, *neglecting obligations*, *dependency*, *feelings of guilt or remorse*, and *harm to self or others*.

Of note, there is no significant statistical association between a *problematic screen for substance use* (problematic drug use likely) and *health status* (refer to Table 3-36 below).

Table 3-36. Problematic substance use and health status (SF6D, PCS, MCS)

	Correlation analysis *p≥.20 *Correlation (p-value)*		
Characteristic (n)	**SF6D**	**PCS**	**MCS**
Problematic substance use (107)	.099 (.312)	-.027 (.786)	.046 (.638)

In addition, stakeholders were interested in learning about the prevalence of injection drug use, and accessibility to needle exchanges. It was felt that this information could assist in understanding the demand for needle exchange services.

14.5% (16/109) individuals currently injected drugs at the time of this survey, with 14/16 reporting that it was easy to access a needle exchange, and 15/16 reporting use of a needle exchange. *Note:* Data collection took place at two sites which include among other services a needle exchange program.

Coping strategies. This study seeks to answer the question *To what extent do Edmonton's inner city residents use active and avoidant coping strategies to deal with life stressors?* The Brief COPE (Carver, 1997) is used to assess coping processes. Each of the 28 Brief COPE items is scored with 0 (not at all), 1 (a little bit), 2 (a medium amount) or 3 (a lot) – indicating the degree to which the

individual is partaking in a particular coping strategy. This Brief COPE has fourteen subscales; and Carver (1997) the creator of this survey does not recommend a particular overall coping index score. As such and for the purposes of this study, the approach developed in a similar study by Permuth-Levine (2007) in her dissertation is used to create two summated scores for "active" and "avoidant" coping strategies in this study, as grouped in Tables 3-37 and 3-38 below.

Table 3-37. Brief COPE scoring

Brief COPE Item Response (original response value)	**Item Score Assigned for this Study**
Not doing this at all (1)	0
Doing this a little bit (2)	1
Doing this a medium amount (3)	2
Doing this a lot (4)	3

For the purposes of this study, the summative scores for *active (possible score range 0-60)* and *avoidant (possible score range 0-24)* coping are scored as per Table 3-38 below. An *active coping summary score* was possible for 102 individuals (mean 29.71, min. 3, max. 30), and an *avoidant coping summary score* for 103 individuals (mean 9.72, min. 0, max. 24).

Table 3-38. Brief COPE items used to create scores for active and avoidant coping behaviours

Active Coping Strategies (Brief COPE Items) ***Possible Score Range 0-60***	**Avoidant Coping Strategies (Brief COPE Items)** ***Possible Score Range 0-24***
Self-distraction (items 1 and 19) Active Coping (2 and 7) Emotional Support (5 and 15) Use of Instrumental Support (10 and 23) Venting (9 and 21) Positive Reframing (12 and 17) Planning (14 and 25) Humor (18 and 28) Acceptance (20 and 24) Religion (22 and 27)	Denial (items 3 and 8) Substance Use (4 and 11) Behavioral Disengagement (6 and 16) Self-blame (13 and 26)

There are significant statistical associations between *coping strategies* (*active coping strategies/active summary score*, and *avoidant coping strategies/avoidant coping summary score*) and *health status (general health/SF6D*, *physical health/PCS*, *emotional well-being/MCS*) (refer to Table 3-39 below).

Table 3-39. Coping and health status (SF6D, PCS, MCS)

	Correlation analysis *p≥.20 *Correlation (p-value)*		
Characteristic (n)	**SF6D**	**PCS**	**MCS**
Brief COPE – Active Summary Score (102)	-.183* (.064)	-.072 (.472)	-.119 (.230)
Brief COPE – Avoidant Summary Score (103)	-.425* (.000)	-.189* (.058)	-.366* (.000)

Note, some distress was observed by the author during administration of the brief COPE questionnaire, as respondents recalled troubling situations as they responded to these questions. As outlined in the approved ethics process, these respondents were offered the option to not respond to these questions and to follow-up with staff with whom they have an established relationship to receive appropriate supports.

Expected mortality rate (chronic disease). This study sought to answer the question: *Considering the presence of diseases known to be associated with a deaths due to chronic disease, what is the expected mortality rate of Edmonton's inner city residents?* However and currently, Alberta Health Services uses a different classification system for calculating risk of death and disability using ICD9 codes as found in the table below (Quan, Sundararajan, Halfon, Fong, Burnand et al., 2005, pp. 1133-5), and recommends against comparing prevalence of these chronic conditions without having the ability to compare to the Edmonton area population.

Table 3-40. ICD9 codes that can be used to calculate Charlson Comorbidity Index Scores generated through this study

Chronic condition assessed by Charlson Comorbidty Index questions	**% (count) study population prevalence** *(n=105)*	**Corresponding ICD9 codes needed to understand Edmonton area population prevalence**
Myocardial infarction	10.5% (11)	410.x, 412.x
Congestive heart failure	8.6% (9)	398.91, 402.01, 402.11, 402.91, 404.01, 404.03, 404.11, 404.13, 404.91, 404.93, 425.4-425.9, 428.x
Peripheral vascular disease	0.0% (0)	093.0, 437.3, 440.x, 441.x, 443.1-443.9, 47.1, 557.1, 557.9, V43.4
Cerebrovascular disease	4.8% (5)	362.34, 430.x-438.x
Hemiplegia	1.9% (2)	334.1, 342.x, 343.x, 344.0-344.6, 344.9
Chronic obstructive pulmonary disease	16.2% (17)	416.8, 416.9, 490.x-505.x, 506.4, 508.1, 508.8
Ulcer disease	12.6% (13)	531.x-534.x
Diabetes*	3.9% (4)	250.0-250.3, 250.4-250.7, 250.8, 250.9
Renal	16.5% (17)	403.01, 403.11, 403.91, 404.02, 404.03, 404.12, 404.13, 404.92, 404.93, 582.x, 583.0-583.7, 585.x, 586.x, 588.0, V42.0, V45.1, V56.x
Connective tissue disease**	9.5 (10)	446.5, 710.0-710.4, 714.0-714.2, 714.8, 725.x
Dementia	2.9% (3)	290.x, 294.1, 331.2
Liver disease	4.8% (5)	070.22, 070.23, 070.32, 070.33, 070.44, 070.54, 070.6, 070.9, 570.x, 571.x, 573.3, 573.4, 573.8, 573.9, V42.7
Leukemia	1.0% (1)	140.x-172.x, 174.x-195.8, 200.x-208.x, 238.6
Lymphoma	0.0% (0)	
Tumor	1.9% (2)	
Metastases	1.0% (1)	196.x-199.x
AIDS	9.5% (10)	042.x-044.x

** Does not include Type 2 Diabetes which is controlled by diet only*

*** Does not include arthritis that is not treated by medications*

Using the Charlson Comorbidity assessment, about one-fifth of the study population has a 85% mortality rate, similar to patients who have a range of comorbid conditions such as heart disease, AIDS or cancer (for a total of 22 conditions) (Katz et al., 1996). In sum, 63.2% (67/106) of individuals have at least a 26% predicted risk for one-year mortality,[14] which is similar to the 28% predicted mortality rate for the 1% of Albertans who account for a disproportionate amount of expenditures (Alberta Health Services, 2013).

Table 3-41. Distribution of expected mortality rate associated with chronic disease prevalence

Expected Mortality Rate *(CCI Scores)*	**Total % (count)**
12% mortality rate (0 points)	37.1%% (39)
26% mortality rate (1-2 points)	34.3% (36)
52% mortality rate (3-4 points)	9.5% (10)
85% mortality rate (5+ points)	19.0% (20)
Total	**100.0% (105)**

This expected mortality rate and the similarity to other high cost users in Alberta is remarkable as the study population is relatively younger than the Alberta population, and yet experiences a remarkably disproportionate risk for death and disability. As observed in Table 3-42 below, there is a very strong association between one-year risk for mortality as assessed by the Charlson Comobidity Index with general health (p-value -.293, sig. .002) and physical

[14] As assessed in this study using the Charlson Comorbidty Index Survey; more detailed information is described in the Results chapter of this study

health (p-value -.387, sig. .000). This finding about risk for death and disability underscores the value of the assessment tools in understanding health status and risk for death and disability. Not only are there observed costs to individual health, but these costs translate into higher health needs and ultimately greater use of health system resources (as described for example in Charlson, Charlson, Peterson, Marinopoulos, Briggs, et al., 2008). These findings underscore the importance of needing to shift the health system towards a performance-based approach, which focuses on improving the health outcomes and improving quality of care for this complex patient population so that, as a whole, patient health status can improve, and further study should be conducted to understand the offset of healthcare expenditures within the context of creating a more sustainable health system (as described for example in Kass-Bartelmes and Bosco, 2002).

Table 3-42. Age-adjusted Charlson Comobidity Index scores and health status (SF6D, PCS, MCS)

	Correlation analysis *p≥.20 *Correlation (p-value)*		
Characteristic (n)	**SF6D**	**PCS**	**MCS**
One-year, age-adjusted risk for mortality as assessed (105) by the Charlson Comorbidity Scores	-.293* (.002)	-.387* (.000)	.022 (.823)

Emergency department use. As frequent emergency department use is associated with lack of access to a regular source of care (Malone, 1995) this study sought to answer the question *To what extent do Edmonton's inner city*

residents use Emergency Department Services? 60.9% (67/110) of individuals reported using the emergency department an average of 14.6 times within the past year (range 1- 500 visits within the past year). The rate of visits for Edmonton's inner city population is much higher than for the average Albertan; "There are 3.7 million people living in Alberta and they visit emergency departments 1.9 million times per year" (estimated rate of 1.9 visits per person; Alberta Health Services, 2014, p. 2). Although the average number of visits per person may seem high, similar numbers reported for the period of 1999-2005, where "the mean number of visits per patient for the Edmonton, Calgary and [non-major urban] regions was 2.0, 1.9 and 2.3 respectively (Rosychuk, Voaklander, Klassen, Senthilselvan, Marrie et al., 2010). The vast majority of visits (93.2%) were made to [Emergency Department] facilities within the same region as patients' region of residence (Rosychuk et al., 2010) When considered relative to other characteristics, *use of the Emergency Department* contributes a portion to the set of characteristics that are predictive of 25% of the variability of physical health status. Previous research has demonstrated that individuals who have a variety of underlying medical, behavioural and psychosocial needs are often high users of the Emergency Department despite the common reality that these concerns cannot be effectively addressed through delivery of traditional Emergency Department services (Agency for Healthcare Research and Quality, 2013); this does not include specialty inner city health promotion and disease prevention activities that fall within the scope of inner city healthcare delivered in the Emergency Department

– where the Emergency Department is accessed as a safety net for health services that are otherwise difficult for inner city individuals to obtain (Cummings, Francescutti, Predy and Cummings, 2006).

3.3 Relationship between health status and characteristics associated with health status

In the previous section, correlations and individual comment on inclusion of the characteristic in the linear regression modeling, implications to health services, implications to policy planning, and the need for further research is identified. The rationale for including characteristics in regression analysis were laid out in Section 3.2, and comment on the relative degree to which significant characteristics correlated with health status. This section sheds more light on the overall relationships between health and characteristics (as outlined in Appendix 3) to answer the study question *What are the characteristics that are most strongly associated with the health status of Edmonton's inner city residents?* In this section, the overall relative strength of the characteristics that are correlated with health status (SF6D, PCS and MCS; $p \geq .20$) are described in light of the linear regression analysis that was performed. The detailed regression analysis approach, including the values considered for removing variables from the backward elimination linear regression, entering into the forward selection linear regression, and forward and backward stepwise regression model was used.

Linear regression was performed ($p \leq .05$, $SLS \leq .20$, $SLE \leq .20$, $SLE < SLS$) and included correlations between health status (SF6D, PCS, MCS) and summary scores or key characteristics (as outlined in Appendix 3 and building on the results presented in section 3.2 of this chapter).

In alignment with and building on existing literature and study results, characteristics considered in regression modeling included *depression*, *age*, *cultural identity (being First Nations or Métis*), *social supports (having children and/or living with others*), *housing status (number of locations lived)*, *employment status*, *legal status*, *problematic alcohol use*, *problematic drug use*, *active and avoidant coping strategies*, *chronic disease burden (one-year mortality risk associated with chronic diseases)* and *use of the Emergency Department*.

There is no previous study available to inform the effect size (regression analysis) which would be used to calculate the required minimum sample size, and so the requirements for the study. This study considers the statistical association between health status and determinants of health. Long (1997) recommends that the minimum sample size should be increased to 100 when estimating sample sizes from alpha, power and anticipated effect size to enable detection of relationships that are practically (clinically) significant but may not appear in the statistical findings with a sample of less than 100. A 10% non-response rate was anticipated, and so the minimum sample size was set at 110 individuals. Throughout the results section, the level of significance required to report a relationship between variables for both correlation and regression

analysis was set at $p \geq .05$ and several positive findings are reported, which supports that the sample size was large enough to examine the relationships between this number of variables.

The intent of this approach is to identify those characteristics that contribute the most to death and disability within the study population, so that stakeholders (those in health system planning roles who were involved in the development of this study) could identify those characteristics that are most greatly associated with health burden, and to identify and isolate the variables that have the greatest contribution to health status – readying the system for targeted investment in areas which address the factors (determinants of health) with the greatest impact and/or association with health status.

Characteristics most predictive of general health. Using stepwise regression, 31% of the variance in the general health score (SF6D) can be accounted for by an increased likelihood of *avoidant coping strategies*, *housing stability*, *having children*, and *value of personal possessions*; conversely, this finding also means that despite having significant correlations between general health and other variables – when considered together, coping and housing stability account for just over half of the influence of characteristics on general health status. It would appear that having children acts as a protective factor to general health, or may indicate that healthier individuals are more likely to have children. Further research is required to establish a better understanding of this relationship. As outlined in Table 3-43, the sample size appears to be adequate for

the purposes of understanding general trends within this population. Considering the standardized B and the standard error, which shows there is a reasonably small variation, it is likely that the general trends of the study findings would be similar in a repeated sample or when compared against the broader population.

Table 3-43. Strength of associations for stepwise linear regression model SF6D

Model		Adjusted R Square	Std. Error of the Estimate	Standardized Coefficient Beta	t	Sig.
1	(Constant)	.172	.10443		33.461	.000
	Avoidant coping			-.425	-4.503	.000
2	(Constant)	.223	.10117		21.409	.000
	Avoidant coping			-.374	-4.003	.000
	Housing stability			.248	2.652	.009
3	(Constant)	.258	.09885		14.045	.000
	Avoidant coping			-.360	-3.933	.000
	Housing stability			.226	2.468	.015
	Visit to Emergency Department			.208	2.306	.023
4	(Constant)	.284	.09706		9.936	.000
	Avoidant coping			-.320	-3.487	.001
	Housing stability			.215	2.383	.019
	Visit to Emergency Department			.230	2.577	.012
	Having children			.189	2.085	.040
5	(Constant)	.309	.09541		9.954	.000
	Avoidant coping			-.337	-3.716	.000
	Housing stability			.262	2.856	.005
	Visit to Emergency Department			.280	3.079	.003
	Having children			.243	2.613	.011
	Value of personal possessions			-.200	-2.030	.045

Ideally, when performing regression analysis, we would want to see a near zero residual mean value, which is the case for this study (refer to Table 3-44 below for more information. When plotted, the histogram was relatively normal, and the pp plots were reasonably close to the regression line. Regressing the standardized residual on the predicted variable did not present any pattern; the trend line on this scatterplot was horizontal – indicating no concerns related to heteroscedasticity. In sum, examination of residual statistics, scatterplot of the manipulated and responding variables and examination of the trend line support that the relationships observed in regression analysis are reflective of the population and not an artifact of the statistical analysis performed.

Table 3-44. Residual statistics for linear regression analysis SF6D

	Minimum	**Maximum**	**Mean**	**Std. Deviation**	**N**
Predicted Value	.4780	.785	.6168	.06800	97
Residual	-.20839	.30874	.00122	.09241	97
Std. Predicted Value	-2.043	2.497	.014	1.008	97
Std. Residual	-2.184	3.236	.013	.969	97

Characteristics most predictive of physical health. About 25% of the variance in the physical health score (PCS) can be accounted for by *chronic disease burden (one-year mortality risk as related to presence of numerous*

chronic diseases), *having children*, *use of the Emergency Department* and *age*. Similar to general health, having children and being able to look after them is somewhat of a protective factor for physical well-being; perhaps the experience of having children is associated with an increase in behaviours which are predictive of increased physical well-being – or perhaps conversely, those with higher physical health status are more likely to have children. Individuals who have greater physical health problems are more likely to use the Emergency Department, and, as we age our physical health declines, which is echoed in the study findings. This is a strong model, and demonstrates that physical health is strongly associated with key characteristics; interventions to *improve chronic disease burden (off-set mortality risk)*, *improve ability to look after children*, *screen individuals for appropriate interventions to improve physical health in the Emergency Department* and *offset decline in physical health as it is associated with the aging processes* should be considered, and a follow-up study to understand the impact to physical health status should be conducted to understand any offset to current physical health burden.

Table 3-45. Strength of associations for stepwise linear regression model PCS

Model		Adjusted R Square	Std. Error of the Estimate	Standardized Coefficient Beta	t	Sig.
1	(Constant)	.111	10.50963		33.007	.000
	Chronic disease burden*			-.347	-3.552	.001
2	(Constant)	.174	10.13328		12.237	.000
	Chronic disease burden*			-.300	-3.139	.002
	Having children			.270	2.821	.006
3	(Constant)	.217	9.86597		6.585	.000
	Chronic disease burden*			-.268	-2.843	.006
	Having children			.296	3.159	.002
	Visit to Emergency Department			.228	2.449	.016
4	(Constant)	.254	9.62572		6.547	.000
	Chronic disease burden*			-.213	-2.243	.027
	Having children			.250	2.667	.009
	Visit to Emergency Department			.234	2.572	.012
	Age			-.225	-2.356	.021

* Chronic disease burden is represented by the Charlson Comorbidity Index score that is used to understand 1-year mortality risk

A near zero residual mean value (Table 3-46 below), a relatively normal histogram, pp plots were reasonably close to the regression line indicate no concerns related to heteroscedasticity.

Table 3-46. Residual statistics for linear regression analysis PCS

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	26.9488	57.1315	42.3047	5.86274	101
Residual	-27.23595	22.34723	.30703	9.50550	101
Std. Predicted Value	-2.615	2.445	-.040	.983	101
Std. Residual	-2.829	2.322	.032	.988	101

Characteristics most predictive of emotional well-being. Approaching half (40%) of the variance in the emotional well-being score (PCS) can be accounted for by a *first-stage depression screen*, *ability to change living situation (shelter)*, and *overall satisfaction with living situation (shelter)*. It would appear as though individuals with a burden on emotional well-being are at a greater risk for a depression diagnosis, experience difficulty in finding alternative accommodations (shelter) if required, and are less likely satisfied with where they are living. This finding suggests that improvements to emotional well-being may well be influenced by interventions that address *depressive symptoms*, and *improve one's ability to find satisfactory housing.* Future research should consider the effects of depressive symptoms and housing on improvements to emotional well-being, and ultimately improved use of and the reduced costs associated with health services. As outlined in Table 3-47, the sample size appears to be adequate for the purposes of understanding general trends within this population; considering the standardized B and the standard error, which shows there is a

reasonably small variation: it is likely that the general trends of the study findings would be similar in a repeated sample or when compared against the broader population.

Table 3-47. Strength of associations for stepwise linear regression model

MCS

Model		Adjusted R Square	Std. Error of the Estimate	Standardized Coefficient Beta	t	Sig
1	(Constant)	.281	8.89855		24.338	.000
	Depression*			-.538	-6.118	.000
2	(Constant)	.370	8.33437		17.838	.000
	Depression*			-.522	-6.330	.000
	Ability to change housing			.307	3.725	.000
3	(Constant)	.403	8.10918		15.756	.000
	Depression*			-.496	-6.139	.000
	Ability to change housing			.252	3.033	.003
	Satisfaction with housing			.208	2.475	.015

* Depression is assessed by the PHQ9 and is indicated by a positive screen for depressive symptoms

A near zero residual mean value (Table 3-48 below), a relatively normal histogram, pp plots were reasonably close to the regression line indicate no concerns related to heteroscedasticity.

Table 3-48. Residual statistics for linear regression analysis MCS

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	25.2661	56.3784	43.3659	7.02748	104
Residual	-18.45345	19.97227	-.12884	7.95889	104
Std. Predicted Value	-2.552	2.008	.101	1.030	104
Std. Residual	-2.276	2.463	-.016	.981	104

3.4 Need for and access to health services and health information

Access to health services. This study sought to answer the question: *What is the need for, and degree to which, Edmonton's inner city residents experience difficulty accessing health services (Objective 2)?* In this study, information was gathered on the number of times individuals accessed basic and specialty health services. However, at this time, Alberta Health Services does not provide comparative information on average use of health services. So, following this study, further comparison of the Edmonton area access and the study population may continue to shed light on variances – if any, in access to these key health promoting services, among different populations residing in the Edmonton area.

As presented in Table 3-49 below, individuals were asked to identify which health promoting services are currently accessed.

Table 3-49. Perceived need for access to types of health services

Type of Health Service (count)	Access not required Total % (count)*	Access required Total % (count)*
Emergency department (95)	29.5% (28)	70.5% (67)
Clinic for day-to-day health needs (94)	25.5% (24)	74.5% (70)
Hospital stay (92)	43.5% (40)	56.5% (52)
Clinic for day-to-day emotional well-being (92)	48.9% (45)	51.1% (47)
Dentist (92)	43.5% (40)	56.5% (52)
Psychiatric hospital (91)	65.9% (60)	34.1% (31)
Problematic drug use (93)	48.4% (45)	51.6% (48)
Problematic alcohol use (93)	60.2% (56)	39.8% (37)
Birth control (88)	28.4% (25)	71.6% (63)
Sexually transmitted infection (STI) (88)	75.0% (66)	25.0% (22)
Female only: PAP test (36)	100.0% (36)	.0% (0)

* % of total

In addition to the above categories, individuals were also invited to identify other health services they use, and this included: *Alcoholics Anonymous*, *BMHC Asthma Clinic*, *diabetologist*, *eye clinic*, *specialist for GI bleeding*, *House to Home (housing supports)*, *lung specialist*, *other mental health supports*, *methadone clinic*, *physio*, *psychologist*, and *surgery for knee and ankle*. For needed services, individuals were asked to identify difficulty accessing, if any, these needed health services (refer to Table 3-50). In designing the study, those working with the study population – who helped design the study tool, identified interest in learning about access patterns to the following health services which are thought to be potentially needed and possibly difficult to access. Those working with the study population requested the average, standard deviation, median and interquartile range for the number of times each of the different health

services listed in the table below were accessed. A smaller number of individuals with a larger number of appointments pulls up the average, whereas the median number of appointments is much lower.

Of note, respondents report that they can access a clinic for day to day health needs just as easily as the Emergency Department, although they are more likely to access care in the Emergency Department (as noted in Table 3-49 above); and at the outset, this finding seems counter-intuitive. Previous research shows that frequent Emergency Department users have more psychiatric, psychosocial, and substance abuse issues than the general population and tend to be complex to manage (for example, Grover and Close, 2009); and this research aligns with the increased prevalence of similar conditions for the study sample. Previous research indicates that the most common reasons for the last emergency room visit were: only a hospital could help; the doctor's office was not open; or there was no other place to go (for example, Gindi, Cohen and Kirzinger, 2012). No information on the reasons for the last Emergency Room visit were gathered in this study so it is difficult to discern further. As confirmed earlier in this chapter through regression analysis – use of the Emergency Department is associated with a lower health status score. A study completed by Kushel, Perry, Bangsberg, Clark and Ross (2002) found increased rates of Emergency Department use for those who were homeless or marginally housed compared to the general population (40.4% of respondents had 1 or more Emergency Department encounters in the previous year; 7.9% exhibited high rates of use

(more than 3 visits) and accounted for 54.5% of all visits; Kushel et al., 2002). Previous research – similar in many ways to the study population, indicates that high rates of Emergency Department use were more common for individuals with less stable housing, victimization, arrests, physical and mental illness, and substance use (Kushel et al., 2009). Future studies should examine the underlying factors contributing to increased use of the Emergency Department – if any, and efforts to reduce Emergency Department use should be targeted towards addressing the underlying factors among those with high use (Kushel et al., 2002).

Table 3-50. Difficulty accessing needed health services

Type of Health Service - access required	Average times accessed in the past 12 months (range: min – max)	Standard Deviation	Median	Interquartile Range[1] (Q3-Q1)	Not difficult at all Total % (count)	Somewhat difficult Total % (count)	Very difficult Total % (count)	Extremely difficult Total % (count)
Emergency department (67*)	14.6 (1-500)	71.0	3.0	4.5 (5.5-1.0)	59.7% (40)	26.9% (18)	9.0% (6)	4.5% (3)
Clinic for day-to-day health needs (70)	23.5 (1-500)	77.6	5.0	10.0 (12.0-2.0)	60.0% (42)	32.9% (23)	4.3% (3)	2.9% (2)
Hospital stay (52)	19.9 (1-500)	85.3	2.0	4.3 (5.3-1.0)	53.8% (28)	28.8% (15)	9.6% (5)	7.7% (4)
Clinic for day-to-day emotional well-being (47)	2.2 (0-52)	8.2	0.0	1.0 (1.0-0.0)	57.4% (27)	25.5% (12)	14.9% (7)	2.1% (1)
Dentist (52)	3.3 (1-24)	4.9	2.0	1.0 (3.0-2.0)	69.2% (36)	30.8% (16)	15.4% (8)	13.5% (7)
Psychiatric hospital (31)	4.9 (1-26)	9.4	1.0	2.0 (3.0-1.0)	48.4% (15)	35.5% (11)	9.7% (3)	6.5% (2)

Problematic drug use (48)	9.6 (1-60)	18.0	3.5	6.5 (7.5-1.0)	47.9% (23)	18.8% (9)	2.1% (1)	8.3% (4)
Problematic alcohol use (37)	.7 (0-10)	2.1	0.0	0.0 (0.0-0.0)	59.5% (22)	29.7% (11)	2.7% (1)	8.1% (3)
Birth control (63)	.2 (0-3)	0.6	0.0	0.0 (0.0-0.0)	22.2% (14)	3.2% (2)	.0% (0)	1.6% (1)
Sexually transmitted infection (STI) (22)	.3 (0-3)	0.8	0.0	0.0 (0.0-0.0)	77.3% (17)	18.2% (4)	.0% (0)	4.5% (1)
Female only: PAP test (20)	.8 (0-2)	0.7	1.0	1.0 (1.0-0.0)	95.0% (19)	5.0% (1)	.0% (0)	.0% (0)

* Results specific to those who indicated they needed access to the listed health services.

[1] The interquartile range was calculated using IQR=Q3-Q1

In addition to providing insights into the access to the services listed above, individuals were invited to identify problems accessing health services, and to identify potential solutions, where possible, to improve access to these health services. 5.6% (6/106) of individuals reported difficulty accessing health services due to it not being covered through provincial or federal programs. Paraphrased comments regarding barriers to accessing services include:

- *No health coverage makes it difficult to get meds.*
- *I have had problems with AISH (insurance) coverage. For example, some x-rays are only covered every five years, and I need to get caps on my teeth and only some will accept AISH coverage. I have experienced a few bad psychiatrists, resulting in mal-practice.*
- *I had to find the right eye care place where my Treaty Status Card could work to purchase glasses.*
- *I have problems getting a AHCIP[15] card because I have no ID.*
- *People need to be accountable, open and honest. We need to make advocates accountable. Services should not be presented as a façade to the public, like a cheap glaze. The Premiere's Council on Persons with Disabilities, police, Ministers, and anyone who has the power to hide behind the shield of services.*
- *I have a health care card, but no picture ID. I get sent away.*

Specific to the Royal Alexandra Hospital Emergency Department 9.4% (10/106) of individuals provided the following comments in regards to wait times:

[15] Alberta Health Care Insurance Program (AHCIP)

- *The wait time at the hospital Emergency is very long – about five to eight hours. Sometimes the doctors will kick you out without even seeing you. They don't check you right.*
- *The hospital needs faster service.*
- *It is hard to get in to see a doctor. You have to wait for six hours. I would rather go to another hospital, as the waits are too long, and I have sat waiting for eleven hours a couple of times.*
- *There are long waits.*
- *There is a long wait of two to three hours.*
- *There is a long wait, but this is okay, as I understand that there are a lot of people who go to the hospital.*
- *Wait times are too long; why bother going?*
- *The wait times are too long.*

Regarding wait times for specialty services, 8.5% (9/106) individuals have experienced problems accessing services; and the following comments were received:

- *Waiting times for some health services happen as we do not have enough health professionals.*
- *I have also had difficulty getting into the AHS – Edmonton Zone STI Clinic, and Recovery Acres on 118 Ave.*
- *I need an operation on my head.*

- *I need knee braces, and did not get them. I got a note from the doctor, and then I had to wait six months. The wait was too long, so I did not get them.*
- *Wait lists are too long.*
- *I would like to have my gallstones out of my body so that I can feel better. It is growing very big and my side hurts very badly, and I wish the doctor could do something very soon.*
- *I need to get my nose fixed (referring to broken nose), and my doctor has made a referral but they are taking their time in getting back to me. I need to pay $1000 to get my nose fixed.*

9.4% (10/106) of individuals identified the need to expand specific services or supports to existing services:

- *You need to open another BMHC[16] clinic to serve the community more effectively.*
- *Hope Mission is too busy.*
- *I would like to have same-day appointments – where I could phone at 8:00 am and get something booked at BMHC.*
- *At BSCS[17], they need to have a staff member who can assist when someone goes unconscious or unresponsive. Having the needed equipment on hand would be helpful.*
- *They should have a nurse on duty at the BSCS during the drop in hours (6:00 pm – 9:00 pm). During the day, it is not so bad because they call the*

[16] Boyle McCauley Health Centre (BMHC)
[17] Boyle Street Community Services (BSCS)

ambulance. For some people, all they need is a bandage because they fell down, and a nurse could do that. This will save the paramedics' time. This nurse could help when someone overdoses, someone to do CPR, someone who can use those paddle things, someone who knows what to do. They (BSCS) also need more clothing for people – pants, shirts, socks and underwear, and more personal hygiene items and feminine supplies. There are a lot of dirty needles in the neighborhood and around BSCS, and this should be more controlled. We need bigger shelters. This way we could house more people. It should be a place like the Bissell Centre where – if you have been using, you can't go in. It's supposed to be a safe haven for us. With it being so crowded and the drinking, one person bumps another and then there is a big fight.

- *It is a two month wait to get into see a dentist for a regular appointment.*
- *There is a long wait for dental appointments at BSCS.*
- *I have been unable to get dental care, and I have very complicated dental work.*
- *There is a four month wait to see a dentist at BMHC.*
- *I am not on welfare, so I do not have coverage for the dentist. I don't have a place to stay so I cannot get on welfare, and get dental coverage.*

3.8% (4/106) of individuals identified improvements in transportation as a means to improve access to health services:

- *I have trouble getting to the dentist, as I need transportation.*
- *Transportation is a barrier to getting health care.*

- *I need a ride.*
- *I needed to go to the hospital and the only way I have to go there is by ambulance. It was only two blocks away – a cab or a limo would be cheaper. There are times when I knew I needed to go to the hospital, and I went there by ambulance.*
- *I have to travel three hours both ways on the bus to get to my psychiatrist appointment.*

1.8% (2/106) of individuals desired support to find housing:

- *I need a place to live.*
- *People have problems getting housing because you have to have an income in order to secure housing. We need a person to help people get on assistance so that you can get into a housing program. You need an income to get housing; to get housing, you need to have an income.*

4.7% (5/106) of individuals identified specific improvements to emotional well-being supports, including:

- *Community health support for mental health should be more accessible to the public.*
- *I need psychiatry for HIV. I don't know how to cope with it.*
- *Specific to the RAH, they admitted me to the psychiatry ward, and they really doped me up to 500 mL Seroquol, twice a day for four days. Someone had to rescue me. It was hard for me to walk. I couldn't remember what I signed but my friend told me that I signed myself out of the hospital. I didn't feel right.*

They should listen to people, and not dope them up. I don't like RAH, and that's why the psych nurses and doctors there don't like me. I don't go to the RAH ED anymore because they always want to put me in the psych ward.

- *Specific to the RAH, the ED is too far away and I don't know where I am. I went to psych at the hospital, and the security guards were pretty lippy. RAH security do not know how to deal with people who have mental health concerns. Regarding some staff at the Alberta Hospital, they don't know enough about a patient and it makes the patient mad.*
- *I had to visit an Emergency Department over depression/suicidal thoughts, and it took several hours to see anyone for what I believe to be serious issues. Some priority should be taken to rush these kinds of patients in.*

11.3% (12/106) of individuals reported that interactions with Royal Alexandra Hospital Emergency Department staff were a barrier to accessing services:

- *I have had problems with getting prescriptions that have been prescribed to me. Mix ups. I have done my part, and they have me on a short leash. They should at least do their part. Specific to the RAH, nurses and everyone are prejudice against IV drug users. They make me wait longer or provide preferential treatment, and I would like to get help more quickly. One nurse said I was next on the list, but I just kept waiting while others were served.*
- *After registering, I would tell the nurse that I have central sleep apnea which means that when my name is called I could be out of it. I asked her to please*

wake me. I was awakened eight hours later and told to go home by a Security Guard.

- *I waited eight hours and saw a doctor for five minutes to get antibiotics. Triage was unfriendly and rude. If they were polite and friendly, it would make the wait better. It would make all the difference in the world. They don't have good bedside manner: I left the room, and staff told me to get back to my room.*
- *They treat you the way you look. If you don't come in with clean clothes, they discriminate against you. I went in there with a knife sticking in my chest, and they told me to go somewhere else. Certain staff just don't give a s***.*
- *Prejudice is a real problem and is the only hospital that I have experienced prejudice of Native people. They refused to give me medication. This "stabbed up" Native guy came in, and three people in front of him with colds were treated first. They told him not to cause any trouble or he would have to go to the back of the line. At home, I have written down all of the times when I saw nurses being prejudice. They have refused my meds on Unit 21; it took 2.5 hours to get my meds to me. I have the details, time, and what the incident was about. I don't care for this area of the city, and I don't know where else I can go.*
- *Rude staff.*

- *Most of the time when I go, I go to sleep it off (drinking). One time I got a little out of hand, and they had to put me in restraints. The restraints were ok because of the state that I was in.*
- *I got really sick and they saw someone before me who was less sick than me.*
- *I refuse to go because when my friends have gone, they were not treated well. Just because you are on the streets doesn't mean you are not a person. Everyone needs health services.*
- *I have never had to go, and I will never go. Wait times are too long, and they treat addicts and homeless people different than normal people. I would never use that hospital. They need to treat everyone equally without bias, and it shouldn't matter if people are drug addicts or alcoholics as they are still human. They should be here to help, and not pick and choose. They need to get new staff. Some are good, but some are bad. It's the same with social workers for immigrants, for example.*
- *I went into the waiting room and it was cold outside. I asked them if I could sleep in a chair for a few hours, and they said yes. This was better than sleeping in a snow bank, and being brought in by an ambulance; hospital security is really bad with drunk people. I ended up pretty beat up that night, as they strapped me to a gurney. I was on pills and out of it. I like the Misericordia Hospital better.*

Specific to the Royal Alexandra Hospital Security Staff, 6.6% (7/106) individuals reported difficulties:

- *The security guards are a***. I was trying to pull up a chair for my knees, and they removed the chair. The nurse gave me a chair, and then security took the chair away, and then I was banned.*
- *They beat me up, hand cuffed me, and charged me with assault. The judge laughed at it, and said I should have charged them. They hate Indians, and I hate them for hating.*
- *Wait times are hours long. Security guards beat you up, and then you don't want to go back. People are then worried about going to see the doctor.*
- *Security guards are rude.*
- *I was hit by a car and was asking the security guard questions about my knee. They raised their voices, and asked me to leave. I wasn't drinking or anything. This was about three weeks after my surgery to fix my knee from being hit by the car.*
- *I was there visiting someone, and was picking some cigarette butts outside; and they kicked me off the property. Then three days later, the same Security Guard saw me when I came to visit, so they handcuffed me, put me in a holding cell, and called the police.*
- *The RAH security is a problem. I was sitting in the food court having coffee. They questioned my boyfriend, and we told them we were getting coffee and had a medical appointment. The doctor called to complain and advocate.*

Beyond the Royal Alexandra Hospital, 7.5% (8/106) of individuals identified situations in which health providers awareness needed to improve:

- *Accepting the "real problem" before dealing with it.*
- *The doctors do not believe when a patient gets sick. I got sick and threw up my meds. The doctor cut my meds in half because people said that I sold them. I stayed in bed all day Saturday and Sunday, and I did my morphine and methadone, and nothing showed in my urine after I threw them up so my meds were cut.*
- *Attitude of health providers could be better; they give me condescending glares. I need more time and support for recovery (care).*
- *Doctors and nurses might miss a diagnosis in an emergency situation, and dismiss the real problem (underlying problem contributing to the emergency situation).*
- *BSCS has a movie about possible improvements to the health system. People need to be polite when asking questions. You shouldn't be rude. You need to be patient. When waiting for health services, pain means you go first.*
- *Staff should be more informed, and this would create easier and less stressful access.*
- *In the past, I have told the hospital staff that I am homeless, they treated me worse than if I had a home.*
- *The doctor fears litigation, and so I have had some difficulty getting examined for a head injury. Canadians are less litigious than the USA; nevertheless, they are discriminated against even if a mere possibility exists – resulting in serious complications.*

Five (/106) other responses were received, in addition to those which have been categorized above:

- *They (AHS) lost my blood work for sexually transmitted infections of Hepatitis C and AIDS.*
- *Money management and home finances*
- *I had to see someone about a sexual assault, and received help. I was happy with the help received. The Hope Mission and police were involved. The hospital care was good.*
- *I need help finding a family doctor, as there are a lot of doctors who are not accepting new patients. Welfare is making me get a medical report fixed. For three years, I have had no problem accessing methadone; and now this year, I need to find a family doctor for special diets and medications. I found a couple of names of doctors from my workers, and I will follow-up from here (no further assistance required at this time).*
- *They need to have a place for people who drink. We are all on the street, and we all sleep in the shelter at night. We need a secure place where somebody's there to help keep us safe so that we are not hiding.*

Health Canada (Bowen, 2001) has studied equity in access to healthcare for underserved populations, which includes inner city and First Nations individuals – two common demographics of the study sample. In their meta-analysis of available research, Health Canada (Bowen, 2001) concludes that "every paper and report in this collection pointed to the need for improvements in

the education and training or recruitment of health care providers for several reasons… Staff education was also seen as a means of providing care that is more culturally competent. Recruiting strategies for health care providers were recommended to provide better service to underserved populations, including the development and expansion of alternative health provider roles." Further, Health Canada supports a policy shift in the design and delivery of services to improve cultural competency: "The majority of papers and reports contained recommendations for health care program design and delivery based on the core idea that there should be a better link between the community and those agencies or government departments developing policies and programs for health care… All the authors or participants spoke of the need for participation of the community and various groups in health care policy development" (Bowen, 2001). Health Canada recommends the following policy-level directive: "if cultural competence were seen as a factor in risk management by senior management of health care organizations, there could be more commitment to achieving culturally competent care" (Bowen, 2001).

Access to health information. And finally, this study sought to answer the question *According to Edmonton's inner city residents, what is the access to, and need for improved, access to health information?* Information about how to share health information was gathered. Individuals are most likely to seek information through their doctor (64.9%, 61/94), and at a health centre (54.3%, 51/94) (refer to Table 3-51 below for more information).

Table 3-51. Preferred ways to get health information

Preferred way to get health information* ***Detailed response where provided***	**Total % (count/94)**
Magazines *SEE Magazine (2), Reader's Digest, Food and Diet, Health, TIME Magazine, Safeway Magazine, New England Journal of Medicine, National Geographic, Biology*	31.9% (30)
TV	37.2% (35)
Video	21.3% (20)
Newspapers *Edmonton Journal (4), Edmonton SUN (9), 24 (2), Metro (3), free newspapers (1), online newspaper*	35.1% (33)
Nurse	50.0% (47)
Doctor	64.9% (61)
Health centre *BMHC (21), Street Works (2), STD Clinic, Callingwood Health Centre*	54.3% (51)
Information sheets	35.1% (33)
Pamphlet	39.4% (37)
Other *Word of mouth (2), RAH ED or hospital (4), Health LINK (2), diabetic therapy, Hope Mission (2), internet (8), BSCS staff or nurse (5), The Mustard Seed, documentaries, community staff (2), my mother, poster, flyer, health bus like the ones that drive around Calgary and Toronto, 211, friends, email*	30.9% (29)

*individuals may have selected more than one source of information

Health communication campaigns often are mandated to reach those people who have the highest risks of mortality and morbidity from disease. Many of these efforts have been unsuccessful, leading health communicators to label [these audiences] as 'hard to reach'" (Freimuth & Mettger, 1990, p. 232). Study stakeholders are interested in understanding the most common mediums and types of information that is of interest to the study population, and as a result questions designed by the author and these stakeholders are included in the study tool.

3.5 Limitations

The survey method is the primary means of data collection. The major limitation to this method is that it relies on self-reported data. Self-reported data may be limited by intentional deception, poor memory, or misinterpretation of the question, which can all contribute to inaccuracies in data. Validated tools, especially those tools found to minimize limitations associated with this self-report method, have been incorporated into the study design where possible.

Study findings are limited to the content of the survey. It is possible that factors external to this study may also impact the relationship between the selected social determinants of health, health status and health service use. However, the study approach has incorporated a robust approach in an effort to understand complex relationships between factors with known associations.

Study findings may be limited to the experiences of the study sample, and local Edmonton area population. A sample size was selected to be adequate for the purposes of understanding general trends within this population, where the standardized B and the standard error are examined to ensure there is a reasonably small variation so that the general trends of the study findings would be similar in a repeated sample or when compared against the broader population. A convenience sample was recruited in this study, and therefore the study results may be limited through this self-selection process. The sample obtained through this study is at a significantly higher risk for morbidity and mortality, when

compared with the Edmonton area population, creating a more homogenous health status than originally anticipated. Research, obtaining a larger sample size, is required to fully understand the relationship between the social determinants of health, health status, and health service use. Validation outside of this sample and population may enhance the confidence in findings, and increase the understanding of the degree to which the study findings may be generalized to broader populations, as well as the influence of potentially confounding factors such as age, gender and comorbidity.

3.6 Assumptions

Assumptions for this study are the same for correlation and regression findings:

- A representative sample (random) was obtained
- Normal distribution for the population exists
- Linearity (relationships approximate a straight line when graphed)
- Homoscedasticity (equal variances)

3.7 Recommended revisions to the study tool

Study stakeholders – such as Edmonton Inner City Health Research and Education Network (EICHREN), the Royal Alexandra Hospital, Boyle Street Community Services and Boyle McCauley Health Centre, were interested in developing a combined assessment tool with the intention to use the results the information gathered with this tool to support planning and delivery of health services tailored to identify needs of Edmonton's inner city residents. A proposed set of validated health assessment measures have been identified, including potential improvements in these tools (refer to Table 3-52 below).

Table 3-52. Summary table of recommended changes required for future use of the combined health assessment tool

Variable/characteristic	Assessment tool	Changes required?	Comments regarding changes to survey tool
Health status	Visual Analogue Scale (VAS)	Remove items	- This tool is redundant as it measures one construct of the SF12v2® tool, and should be removed from future iterations of the combined tool
	SF12v2® enhanced mental health version	Review items	- Explore use of emotional well-being summary scores (MCS) in interpretation of severity of depression screen to explore the overlap of constructs measured by the SF12v2® and PHQ9 tools - Keep depression screening items and calculated variable, and functional impairment to carrying out daily activities
Depression	PHQ9	Remove items	
Age and gender	ARC questionnaire	Keep items	- Keep age question as it is required for scoring SF12v2® and is also a characteristic associated with health status - Keep gender question as it is required for scoring SF12v2
Cultural identity	ARC questionnaire	Review items	- Keep First Nations/ Métis cultural identity question, and tailor responses to reflect the most common categories
	Self-report language	Review items	- Keep self-report language questions and refine responses to reflect most common responses, as this information can be used to develop and increase the meaningfulness of health behaviour messages that assist in getting key study results to inner city residents
Education	ARC questionnaire	Remove items	- Remove amount of education items as this characteristic is not associated with health

Income level	ARC Questionnaire	Remove items	- Remove income items as this characteristic is not associated with health
	Low income cut off (LICO)	Keep items	- Keep questions about employment status - Update the low income cut off to reflect the most recent version distributed by the government of Alberta
Social supports	ARC questionnaire	Review items	- Keep questions about having children, and develop questions to assess the reasons for the protective aspects of having children on health status - Keep questions about living with others and calculated variable about living alone - Develop questions that assess perceived loneliness, and the impact of the quality of personal social network on health status - Develop questions to assess circumstances that contribute to individuals who live on the street without shelter
Legal status	ARC questionnaire	Keep items	- Keep questions about legal status, and calculated variable about being under judicial restraint
Employment status	ARC questionnaire	Keep items	- Keep questions about employment within the most recent 30 days
	Self-report	Keep items	- Keep self-report items as this information may assist in planning services and policy to improve likelihood of employment
Quality of food consumed	Canadian Community Health Survey (food items)	Review items	- Replace Canadian Community Health Survey (food items) with a tool appropriate for an inner city population

Housing status	ARC questionnaire	Keep items	- Keep assessment of number of places slept within past 30 days, and calculated variable of those who slept in more than one place - Keep housing stability and satisfaction questions
Problematic alcohol use	Alcohol use disorders identification test (AUDIT)	Keep items	- Keep problematic alcohol use items as this characteristic is not associated with health (regression analysis); however, this is an important clinical care consideration
Problematic drug use	Drug use disorders identification test (DUDIT)	Keep items	- Remove problematic alcohol use items as this characteristic is not associated with health (regression analysis); however, this is an important clinical care consideration
Active and avoidant coping strategies	Brief COPE	Keep items	- Keep questions used to assess and create summary scores for active and avoidant coping strategies
1-year mortality risk (chronic disease)	Charlson Comobidity Questionnaire	Keep items	- Keep questions used to assess and create summary scores for 1-year mortality risk (chronic disease)
	Self-report	Review items	- Review utility of self-report items with Boyle Street Community Services, Boyle McCauley Health Centre, Royal Alexandra Hospital Emergency Department, and Edmonton Inner City Research and Education Network to determine utility and possible revisions of these items
Access to health services	Self-report	Keep items	- Keep use of Emergency Department question as lack of access to regular sources of care contributes to frequent emergency department use
Access to health information	Self-report	Refine items	- Review utility of self-report items with Boyle Street Community Services, Boyle McCauley Health Centre, Royal Alexandra Hospital Emergency Department, and Edmonton Inner City Research and Education Network to determine utility and possible revisions of these items

Last comments or suggestions	Self-report	Keep items	

Generally speaking, future research may examine the following:

- Resample in other areas of the province to see if these trends change by geography;
- Validate the study findings with a similar and/or larger sample, or in other geographic areas;
- Validate the use of study tools with other populations to determine appropriateness for assessment of the social determinants of health, health status, and health services use;
- Assessment of uptake of study findings to determine the most appropriate and effective means for influencing planning and delivery of health services, and related policy implications;
- Periodic assessment overtime may be completed using the study tools or a subset of these tools to determine the effectiveness of interventions and/or changes in population characteristics over time – providing a baseline for future studies; and
- Understanding the clinical application and feasibility of using these tools to inform clinical care planning for individuals and patient groups.

Chapter 4 – Healthy Public Policy: Possible Interventions, and Recommendations

This final chapter describes how these health needs assessment results can be interpreted and applied effectively within the context of current healthy public policy, possible interventions, and ultimately recommendations. The discussion presented in this chapter meets study Objective 3, and ultimately answers the question identified by agency stakeholders and the thesis committee, *What are the Canadian, and more specifically Albertan, policy-level interventions and initiatives that can serve to address the key needs of Edmonton's inner city residents identified in this study?* Broadly speaking, decision makers working in health and human services will be interested in the key findings of this study. The discussion stems from the central hypothesis of this study that *Individuals residing in Edmonton's inner city 1) experience a lower health status and are characterized by a number of social determinants of health which negatively impact health status (characteristics associated with health), and 2) have increased health service use, considering general health service use as well as Royal Alexandra Hospital Emergency Department use*. The Royal Alexandra Hospital Emergency Department, Boyle McCauley Health Centre, Boyle Street Community Services, and the Inner City Health Education Network commissioned this study to understand the characteristics most strongly associated with health status, and to understand the types of health services and information that is most needed by Edmonton's inner city residents.

Alberta strives to address the health and social needs of Albertans (Alberta Government, 2015c), and discussion and recommendation of these findings is completed within this context. Additionally, some characteristics (such the qualitative findings) were not gathered in a way that was conducive to regression analysis; implications of these findings (such as cultural sensitivity and difficulty accessing services) will be discussed on their own merit. Key findings will be discussed in light of health status, chronic disease and mortality risk, housing insecurity, program and service consumption, and access to services. This approach meets the study objectives: to identify characteristics most strongly associated with health status, and 2) to identify health services and information most needed; so that Royal Alexandra Hospital Emergency Department, Boyle McCauley Health Centre, Boyle Street Community Services, and the Edmonton Inner City Health Research and Education Network can foster the continued delivery and evolution of services for residents of our inner city.

According to the World Health Organization (WHO), health promotion is "the process of enabling people to increase control over, and to improve, their health. It moves beyond a focus on individual behaviour towards a wide range of social and environmental interventions" (2015). Since the 1970s, "health for all" – as promoted by the WHO, has been popularized and serves as the basis for their primary health care strategy to promote health, human dignity, and enhanced quality of life (Mahler, 1981). Spurred by Health for All (Mahler, 1981), in 1986, Canada coined the Ottawa Charter for Health Promotion – described as health

promotion policy that recognized the importance of "putting health on the agenda of policy makers in all sectors and at all levels" (World Health Organization, 1986). Two years later, the Adelaide Declaration (1988) was released to expand on the Ottawa Charter, and also serves to link health promotion and healthy public policy; where this policy is "characterized by an explicit concern for health and equity in all areas of policy and by accountability for health impact. The main aim of healthy public policy is to create a supportive environment to enable people to lead healthy lives. Such policy makes healthy choices possible or easier for citizens" (concepts also echoed in Cameron, Mathers, and Parry, 2006). The Charter builds on "progress made through the Declaration on Primary Health Care at Alma Ata, the World Health Organization's Targets for Health for All document" as well as preceding debate at the World Health Assembly on intersectoral action for health (World Health Organization, 1986). Together, these key documents provide health promotion practitioners with a foundation for their work.

Levine and Reed (2007) recommend a six step process for developing public support for which results in political support for policy, and eventually accountability for the investment of public resources: gather information; prepare to develop a strategy; draft the strategy; prepare for action; take action; and evaluate. Through this study, information was gathered to develop recommendations that provide the context for strategy. Key decision makers accountable for the delivery of these strategies can use the information presented

in this document to align action, and evaluate the impact of their initiatives which address the key concerns and recommendations raised in this study.

4.1 The bigger context – health promotion and public health, and policy

The WHO identifies that universal coverage will reduce exclusion and social disparities in health (2015). Canada has a universal healthcare system; however, despite having a universal healthcare system, research has demonstrated that financial barriers reduce access to medical care and can affect health outcomes (Health Canada, 2014). The Public Health Agency of Canada (PHAC) has identified seven key competencies for public health professionals. The fourth competency is particularly relevant to this study, and specifically identifies partnerships, collaboration and advocacy as essential to health promotion and effective policy changes to support programs and services that align with improving health status and access to health services: partnerships, collaboration and advocacy "…captures the competencies required to influence and work with others to improve the health and well-being of the public through the pursuit of one common goal. Partnerships and collaboration optimize performance through shared resources and responsibilities. Advocacy – speaking, writing or acting in favour of a particular cause, policy or group of people – often aims to reduce inequities in health status or access to health services" (PHAC, 2007, p.5). In this study, several agencies (i.e., Royal Alexandra Hospital Emergency Department, Boyle McCauley Health Centre, Boyle Street Community Services, and the Inner

City Health Education Network) partnered to develop, support the conduct of, and understand the implications of this study. Additionally, the committee members supervising this thesis are engaged with these partnering organizations.

In 2011, Alberta Health Services released a healthy public policy report "A literature review of collaborative mechanisms and healthy public policy advocacy." The primary audiences for this review are: "Healthy Public Policy Team, staff from the Health Promotion, Disease and Injury Prevention Unit, and from Population and Public Health. AHS colleagues working at the Zone public health level may find this information relevant. Secondary audiences would include people working in similar contexts outside of AHS" (Alberta Health Services, 2011, p. 3). Through this document, Alberta Health Services identifies the need for a collaborative mechanism to create a continuum of programs and services: "collaboration is a mutually beneficial and well-defined relationship entered into by two or more organizations to achieve common goals" (Alberta Health Services, 2011, p. 3).

4.2 Policy and interventions across Canada

The public health policy cycle, and the influence of political will (i.e., society's commitment to support or alter prevention initiatives), is essential for securing the resources for needed policy change (Lezine & Reed, 2007). "Most population-based public health approaches that could prevent death and disability

require social and political support to have a lasting effect" (Lezine & Reed, 2007). By taking this integrated approach, study findings help identify key health and equity needs, and the recommendations are aligned with current Alberta initiatives which are accountable for addressing the health need identified in this study. Implementation of an integrated model to address health needs and improve health will require support from non-profit organizations, health services, and departments in multiple levels of government.

"Health promotion goes beyond healthcare. It puts health on the agenda of policy makers in all sectors and at all levels, directing them to be aware of the health consequences of their decisions and to accept their responsibilities for health" (PHAC, 1986). Health promotion policy is a coordinated action that leads to greater equity in health, income and social circumstances (PHAC, 1986). As healthy public policy is a foundational element for delivering effective public health and health promotion, and to establish the context for possible policy-level interventions in Alberta, a review of local, provincial and national healthy public policy related to the delivery of not-for-profit and government inner city programs and services across a sample of Canadian jurisdictions (i.e., neighbouring provinces of British Columbia and Saskatchewan, and the large and densely populated Ontario) was undertaken; using the University of Alberta library and Google databases, and the search terms *healthy public policy*, *inner city* and *Canada*.

In 2007, the Health Council of Canada completed a review *Why Health Care Renewal Matters*, which includes a review of the service delivery reforms occurring across Canada, some of which are relevant to understanding the implications and forming recommendations for this study. At a national policy level, the Canadian Medical Association (CMA) recognizes that "the most vulnerable populations are least able to access and navigate the health care system[, and these are the people who are] most likely to need health care because the essential determinants of health – housing, education and food security, are often not available to them" (CMA, 2010). The CMA proffers the principle and policy direction that *change must be undertaken with the patient's interests at the centre* because "all Canadians must have access to the full range of necessary (evidence-informed) health care services using a variety of funding options as necessary to ensure universal coverage regardless of ability to pay. This includes the needs of vulnerable populations who may not be able to access services due to a variety of barriers (e.g., geographical, socio-economic and demographic)" (CMA, 2010, p. 2 and 5). Further, in 2014, the Mental Health Commission in Canada published a multi-site study of 2000 individuals who participated in the world's largest trial of Housing First across five Canadian cities. The housing first model is not only housing – this model represents a continuum of services provided to those who are chronically without shelter through to those who are independently housed; housing first participants actively engage in support and treatment services intentionally delivered in community

settings to divert services otherwise accessed from crisis and institutional programs (Mental Health Commission of Canada, 2014). In alignment with other national and international research, this housing first model demonstrates significant cost savings – where on average in the Canadian multi-site study every $10 invested in services resulted in an average costs savings of $9.60 for high needs individuals and $3.42 for moderate needs, and this investment in targeted services resulted in measurable improvements to housing stability, quality of life and community functioning outcomes (Mental Health Commission of Canada, 2014). Canada has a number of evidence-informed national policy directives to address the needs of vulnerable Canadians who face multiple socio-economic barriers.

Considering how this national policy directive is reflected in provincial policy, and to begin in Ontario, there are several health, human services and community organizations assisting inner city individuals. In their second report to the Ontario Government in 2007, the Ontario Health Quality Council identified a three-pronged approach to developing a more equitable system based on maximizing three of the other attributes: 1) improve the accessibility of the health system through outreach, location, physical design, opening hours, and other policies; 2) improve patient-centeredness of the system by providing culturally competent care, interpretation services, and assisting patients and families surmount social and economic barriers to care; and 3) cooperate with other sectors to improve population health (Lettner, 2008, p.5). As an example of an initiative

that supports this policy direction to gather information to help identify service priorities and needed programs, the Centre for Research on Inner City Health conducts research to understand the relationships between poverty, social exclusion and poor health; and work in partnership with community agencies and decision makers to evaluate population health interventions to improve health outcomes for inner city populations (CRICH, 2015). As well, in Ontario, the Hospital Collaborative on Vulnerable and Marginalized Populations was founded in 2007, and is a group of hospitals working together to reduce health inequities for vulnerable and marginalized populations (St. Michael's, 2015).

The Saskatchewan government released two policy-level documents to provide direction for the development of housing and wrap-around social and health supports: *A Strong Foundation – The Housing Strategy for Saskatchewan 2011-19* and the *2011-12 Provincial Action Plan*, "which outlines the government's key activities for the strategy's first year of implementation" (Government of Saskatchewan, 2013). The government considered these documents to be policy-level precedents that would support moving towards a multi-sectoral approach to meet the needs of citizens who faced multiple barriers that resulted in significant health and social burdens; where the resulting initiatives would promote a housing model that "enhances well-being, builds local communities, and contributes to a growing province" (Government of Saskatchewan, 2013). To translate policy into action, and create both political and public support for subsequent initiatives, the Saskatchewan Housing Corporation

"held strategy consultations with more than 350 housing stakeholders throughout the province to tackle these issues and set out tangible solutions. These discussions resulted in five broad strategic priorities: increase the housing supply; improve housing affordability; support individuals and families in greatest housing need; enhance strategic planning for housing; and collaborate, communicate and educate" (Government of Saskatchewan, 2013).

The Saskatchewan provincial housing strategy acknowledges "that every member of the housing sector has a role" and provides "support to individuals and families in need" through the Saskatchewan Assistance Program and the Transitional Employment Allowance; "the Government of Saskatchewan provides shelter funding to eligible individuals who are unable to meet their basic needs. The Saskatchewan Rental Housing Supplement is also available to assist… families and individuals with low- to moderate-incomes to access quality and affordable housing" (2013). More specifically, opened in 2012 in Saskatoon, the Lightspeed Supported Living serves low-income working people, students, people with disabilities or mental illness who are able to live independently, and those recovering from addictions who require some support to be successful (Government of Saskatchewan, 2013). A second building, Milton Heights, was opened in 2012 in Regina, and is "home to people who would otherwise be homeless or at risk of homelessness"; and providing services "ranging from independent living accommodations (i.e. apartments) to more comprehensive

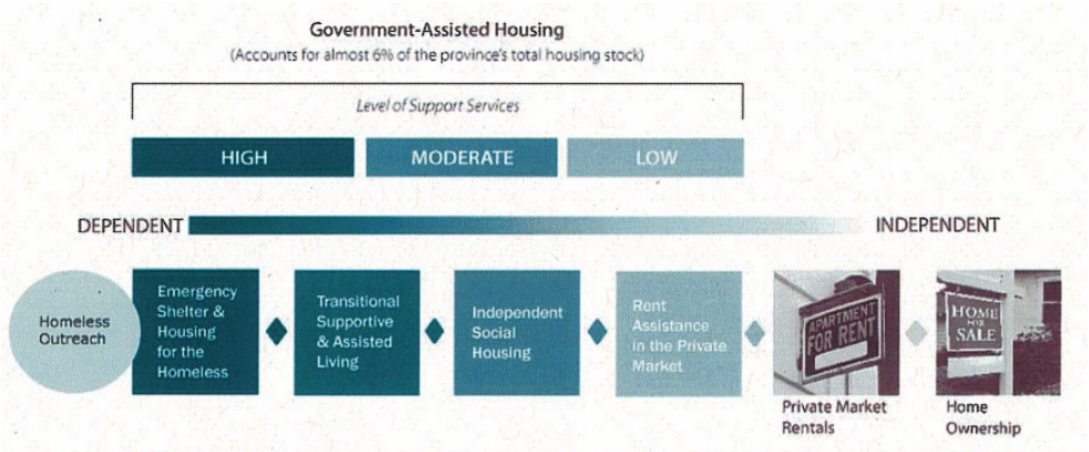
personal care facilities… catering to low and middle income seniors and vulnerable adults (Saskatchewan Labour Relations Board, 2009).

Further, under this policy direction, communities were encouraged to participate in the Encouraging Community Housing Options (ECHO) program and complete a housing plan and develop a strategy to increase the housing supply and access to support services; as of April 2013, Esterhazy, Prince Alberta, Swift Current and Weyburn had completed a plan (Government of Saskatchewan, 2013). In addition to these housing and service initiatives, Saskatchewan Health also provides mental health and addictions supports through locally developed and delivered programs and services that address mental health concerns, and problematic drug and alcohol use (Government of Saskatchewan, 2013b). Beyond regular services delivered through government agencies, the federal CMHC program funded the Regina Healthy Housing ™ demonstration project: "a non-profit community services organization, three levels of government and community groups pooled their resources to build the [project and show] that affordable housing can also be healthy, flexible, energy-efficient and accessible to people with disabilities" (CMHC, 2011). As well, similar to the Boyle Street Community Services here in Edmonton, local agencies – such as the Carmichael Outreach in Regina, provide supports for those facing socio-economic barriers; the Carmichael Outreach programs include a needle exchange, children's needs, used clothing and small household item depot, community garden, and summer time kids camp. Saskatchewan has multiple service providers (i.e. not for profit

and various levels of government) assisting individuals who face socio-economic issues.

In British Columbia and in 2005, the Emergency Shelter Program was transferred to BC Housing from the Ministry of Employment and Income Assistance as part of the provincial centralization of housing and homelessness services (BC Housing, 2012). A program framework for this program was released in 2012 as a 3rd edition, and represents the delivery of a continuum of services for those who face significant socio-economic barriers:

Figure 4-1. The British Columbia housing and service continuum (BC Housing, 2012)



Although the above program and service delivery model is delivered through BC Housing, the model provides varying levels of government-assisted support services through to independently owned housing. Formally, Service Canada, Ministry of Children and Family development, Ministry of Public Safety and

Solicitor general, BC Housing, BC Corrections Branch, Ministry of Social Development, Regional Health Authorities, homeless networks and coalition groups, local municipalities, and Shelter Net BC Society work together to meet a continuum of socio-economic needs (BC Housing, 2012). This overarching framework provides the policy-direction for the province by outlining key program elements, standards and guidelines, and defines the roles and responsibilities of BC Housing and its partners in the delivery and management of the program; where this framework was developed and endorsed through public, service delivery and political consultation (BC Housing, 2012). In this model, individuals have access to support services through information and referrals, and a case plan is developed and monitored to document and track needs and resources offered; and for those who experience housing insecurity, immediate needs of nutrition and hygiene services are met, and stable accommodation is provided. The government and political interests maintain policy-level accountability through a series of government-mandated reporting requirements to ensure operations are transparent and accountable (i.e., providers maintain records, and regularly report achievement towards achieving predetermined program goals and targets; BC Housing, 2012).

4.3 A multi-sectoral policy issue and call for action in Alberta

"Social policy determines the kind of society that Albertans want for themselves, their families, and their communities. It expresses how we care for

(and about) one another, and it influences our development as people and a society. As a result, social policy extends beyond a narrow definition of social services and supports: it is about how we work, live, and spend our time, and it helps determine how we come together to meet human needs like housing, employment, education, recreation, leisure, health, safety, and the care of children" (Alberta Government, 2013). Implementation of an integrated inner city health promotion model with wrap-around services will require support from non-profit organizations, health services and departments in multiple levels of government. "Increasingly, the decision about which evidence-based practices to implement arises from discussions occurring in the context of community collaboration, which brings together service providers, policy makers and researchers" (Rugs, Hills, Moore & Peters, 2011, p. 29).

Similar to other Canadian jurisdictions, the housing first approach in Alberta addresses the needs of individuals who face socio-economic barriers and live in a continuum of housing states from *chronically homeless* through to *independently owned homes* (Canadian Alliance to End Homelessness, 2015); plans to address these needs are now in place in more than 240 United States communities and a growing number of Albertan jurisdictions such as Calgary, Edmonton, Grand Prairie, Lethbridge, Medicine Hat, Red Deer, and the Regional Municipality of Wood Buffalo (CAEH, 2015). In late 2007, the Alberta government formalized a policy directive and embarked on a 10-year plan to address socio-economic barriers and live in a continuum of housing states; on

January 23, 2008, the Government of Alberta announced the establishment of the Alberta Secretariat for Action on Homelessness (the "Secretariat"; Alberta Government, 2015).

Alberta Government – Human Services (2015c) has compiled a figure of services – centering on housing stability (ranging from those who are stably housed through to those who face chronic homelessness) as outlined in Figure 4-2 below:

Figure 4-2. Alberta housing supports spectrum*

**developed by the Alberta Interagency Council on Homelessness (Alberta Government, 2015c)*

	Homeless				**Housed**				
Housing circumstances	**Un-sheltered**	**Emergency sheltered**	**Provisionally accommodated**	**At-risk of homelessness**	**Supportive housing**	**Supported housing**	**Social housing**	**Housing subsidization**	**Pure market Housing** *Out of Scope*
Description	Living on the streets or in places not intended for human habitation	Shelters for people who are homeless, and Women's Shelters	Accommodation is temporary or lacks security of tenure; includes transitional facilities and people accessing private, temporary accommodation	Sheltered individuals whose current economic and/or housing situation is dangerously precarious or does not meet public health and safety standards	Combines accommodation with on-site supports and care; may be congregate or independent living units	Accommodations with supports arranged off-site	Units are owned and operated by government or non-profits	Accommodation with subsidies	
Access to supports	Outreach services that connect with people where they are	On-site essential services; facilitated access to supports	Where accommodations are provided by government/agencies, on-site access to supports may be available	Typically required to be initiated by the individual	On-site staff provide or coordinate supports of varying intensities to residents	A range of supports services customized to client needs to increase/ maintain housing stability	Supports accessed through mainstream services accessible to all Albertans	Housing-specific financial support	**Supports accessed through mainstream services accessible to all Albertans**

Housing examples (not exhaustive)	• Public spaces • Squatting in private spaces • Vehicles, attics, garages • Makeshift shelters	• Emergency shelters • Women's shelters • Youth shelters • Respite • Community crisis beds (Health Services)	• Penal institutions • Medical/mental health institutions • Community residential treatment facilities • Foster care • Youth group homes • Refugee/newcomer accommodation centres • Transitional housing • Second stage housing • Staying with others/"couch surfing" • Hostels, rooming houses, motels • First Nations community temporary housing • Disaster relief housing	• Those whose employment is precarious • Those experiencing sudden unemployment • Households facing eviction • Housing with transitional supports about to be discontinued • People with severe and persistent mental illness, active addictions • Breakdown in family relations • People facing, or living in direct fear, of violence/ abuse	• Residential living – group homes and harm-reduction housing • Seniors lodges • Assisted and enhanced living facilities • Rent supplements	• Housing first (e.g. intensive case management/ assertive community treatment) • Home care for seniors and those with physical/ developmental disabilities • Rent supplements	• Seniors self-contained accommodations • Community housing managed by housing management bodies • Co-op/co-housing • Rent supplements	• Rent supplements • Habitat for humanity • Co-op/co-housing • Employer-supported housing • First time home buyers programs • Affordable housing • Private sector housing	**Pure Market Housing** *Out of Scope)*
	Canadian Definition of Homeless – individuals and families residing in these locations are considered to be homeless, in that they are "without stable, permanent, appropriate housing of the immediate prospect, means and ability of acquiring it" (Canadian Homeless Research Network, 2012)								

To align with the Alberta context and improve the likelihood that study findings will be useful to project stakeholders, this study aligns with the Alberta Health Services "intersectoral and collaborative approach to develop or advocate for healthy public policy… Healthy public policy is characterized by an explicit concern for health and equity in all areas of policy and by accountability for health impact" (2011, p. 1).

As outlined in Alberta's Social Policy Framework (Alberta Government, 2013), there are four main goals: "reduce inequality; protect vulnerable people; create a person-centered system of high quality services; and enable collaboration and partnerships." The Social Policy Framework enables "social policies, programs and systems that produce better results (also known as 'outcomes'). These outcomes frame and set the overall purpose and direction of social policy in Alberta. They will provide the government and its partners with an effective tool for focusing social policy priorities and actions for the next 10 to 15 years" (Alberta Government, 2013). The "social policy framework outcomes" (i.e., safe, healthy, secure and resilient, lifelong learners, included, and active and engaged) are relevant to this study and have been aligned with the resulting recommendations (Alberta Government, 2013). A second set of "system and delivery outcomes" (i.e., aligned, balanced, accessible, accountable and sustainable, and complementary) provides context for policy reform and service integration, and these as well have been aligned with the study recommendations (Alberta Government, 2013). Provincially, and here in Alberta, Premier Prentice

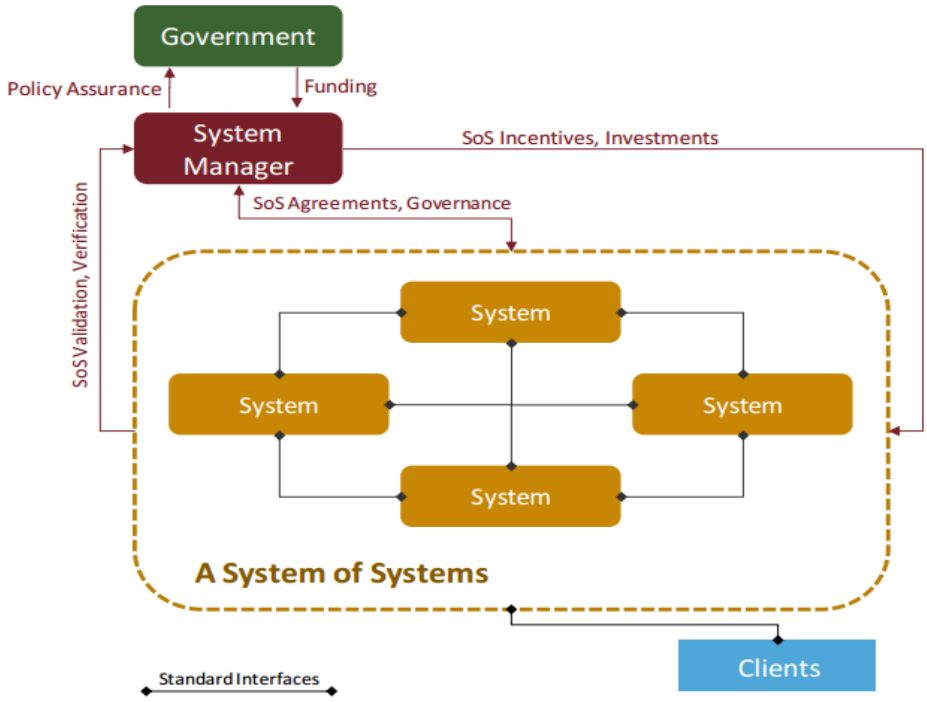
has mandated the Minister of Seniors to develop a provincial Housing Strategy (as outlined in Figure 4-2 above) that will provide a vision towards meeting Alberta's long-term housing needs and aligns (Alberta Government, 2015c).

In Edmonton, services that meet the health needs of inner city residents are provided by an often fragmented network of service providers, working at the level of locally, provincially and federally funded government and non-profit agencies (as described by McMurray-Avila, Gelberg & Breakey, 1999, pp. 8-24). One of these providers is the Royal Alexandra Hospital (RAH) Emergency Department (ED). The RAH has identified a priority to develop services and implement health promoting services to improve health by mitigating relevant social determinants of health, and improving timely and appropriate access to healthcare services. Understanding the determinants of health, health status and access to health promoting services may assist in planning health services that address the factors most influencing the health of inner city residents. Cummings, Francescutti, Predy and Cummings (2006) confirm that health promotion and disease prevention fall within the scope of inner city healthcare; and conducted a feasibility study to demonstrate that – like this study, health risks can be identified and health promotion interventions can be developed to address these disease prevention risks. Likewise, this project has assisted in the identification of gaps in Edmonton's local network of health promotion and disease prevention services, using this information in turn to further develop health promotion and disease prevention services at the RAH ED.

4.4 Work underway to address key health promotion needs

Canadian inner cities are characterized by high rates of unemployment, inadequate housing, full-time workers with low pay, single parent households, people with disabilities and chronic illnesses (Wasylenki, 2001). “Inner city health in particular is a subject of concern for frontline health providers and policy-makers alike who advocate reforms to the urban health care system” (Lovell, 2008, p. 1). The characteristics that appear to be the most influential are those that occur both inside and outside of the health care system, and a shift in services to the community care providers should be taken into account when making decisions about targeted investment that avoids future cost pressures. A broader, cross-ministry approach is necessary to decrease risk for death and disability, and ultimately reduce costs. “If we are trying to take a systematic approach to managing an integrated policy… we need to get various independent planning, regulating, decision-making and reporting systems to work together towards a common goal. As illustrated in Figure 4-3 below, this approach allows for these systems to be distributed among various government departments, local and regional governments, independent agencies, NGO’s and industry groups” (Fallows, 2011, p. 2).

Figure 4-3. System of systems (Fallows, 2011, p.2)

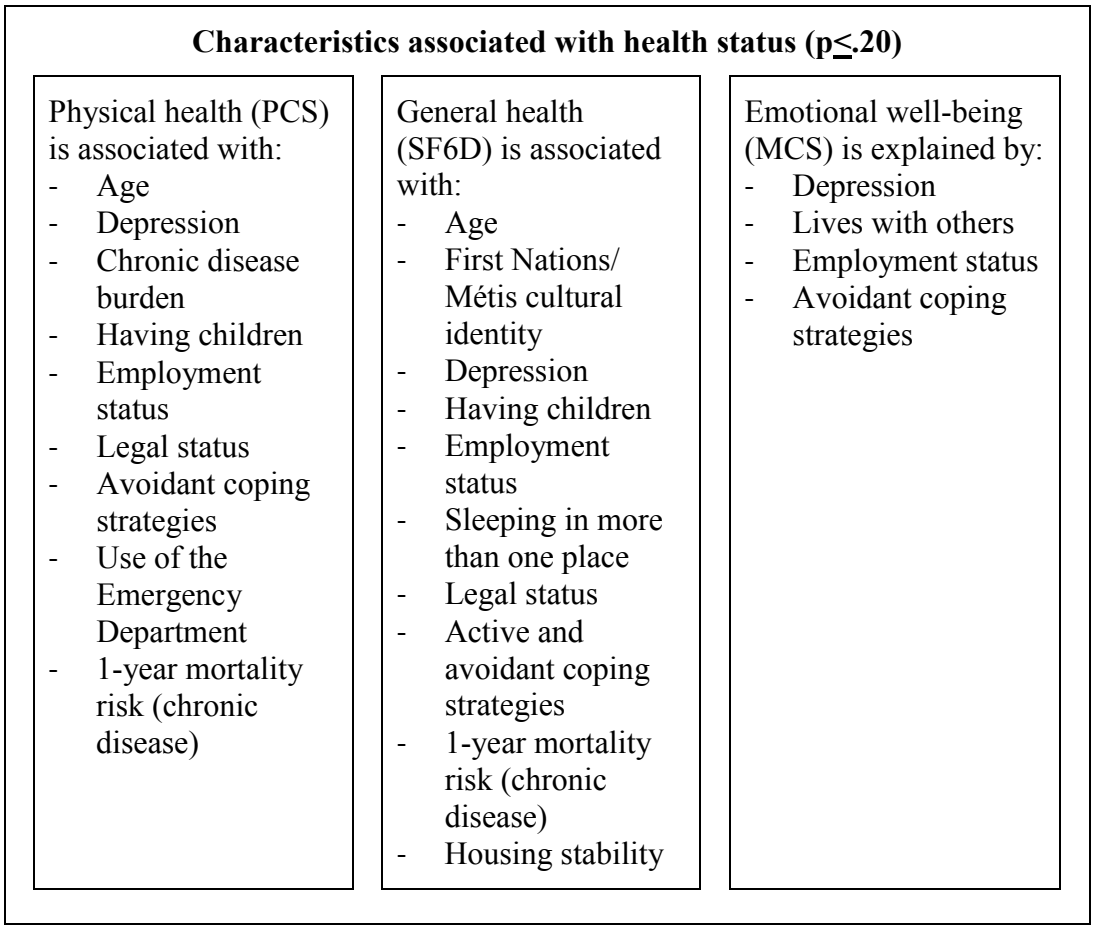


When considered from a systems perspective, health status is affected by a myriad of determinants that need to be carefully considered and assessed so that urban health strategies and policy interventions can be tailored to address current inner city health needs. If the aim is to improve overall health, interventions need to be targeted to improve general, physical and emotional well-being. Inner city residents face disproportionate health risks that are associated with housing instability, harmful drug and alcohol use, and increased incidence of chronic disease and mental health issues – for example (Wasylenki, 2001). Inner city individuals are at increased risk for premature death, and factors such as the daily struggle to meet basic needs, difficulties accessing services, mental illness, and addictions further service to limit many inner city resident's appropriate access to

health care services (Burt, 2001; Gelberg, Gallagher, Andersen & Koegel, 1997; and Kushel, Vittinghoff & Haas, 2001: for example). Public policy such as cutbacks in social assistance payments and social services programs, and a lack of proper social housing, further exacerbate the already higher health risks experienced by inner city residents (as described in Ahmed, Mohammed & Williams, 2007, and Wasylenski, 2001 for example).

To achieve study *Objective 1* and *2*, significant relationships between *health status*, *characteristics* and *frequency of using health services within the past year* were defined as $p \leq .20$ and have been summarized in Figure 4-4 below.

Figure 4-4. Characteristics associated* with health status (SF6D, PCS, MCS)



**Refer to Section 3.2, Chapter 3 for specific correlations and strength of associations*

Three linear regression models were used to determine the degree to which characteristics were likely to be associated with health status, while accounting for the potential effects of other factors. In the first model, the dependent variable was general health status, in the second physical health status (PCS) and in the third emotional well-being (MCS) (refer to Figures 3-2 and 3-3). Overall, 25% of the variance in *physical health (PCS)* can be explained by

chronic disease burden (1-year mortality risk), *having children (a protective social support factor)*, use of the emergency department (reflecting severity of health needs/need for urgent care, or difficulty accessing usual health care/need for safety net care), and age. 31% of the variability of *general health (SF6D)* can be accounted for by increase in avoidant coping strategies (such as *denial*, *substance use*, *behavioural disengagement* and *self-blame*). 40% of *emotional well-being (MCS)* is accounted for by *presence of depressive symptoms*, *lack of ability to change living situation*, and *overall dissatisfaction with living situation (shelter)*. Figure 4-5 below provides a good visual summary of those characteristics that are most strongly associated ($p \leq .05$) with general health (SF6D), physical health (PCS) and emotional well-being (MCS) as assessed by the SF12v2® tool.

Figure 4-5. Characteristics most strongly associated* with health status

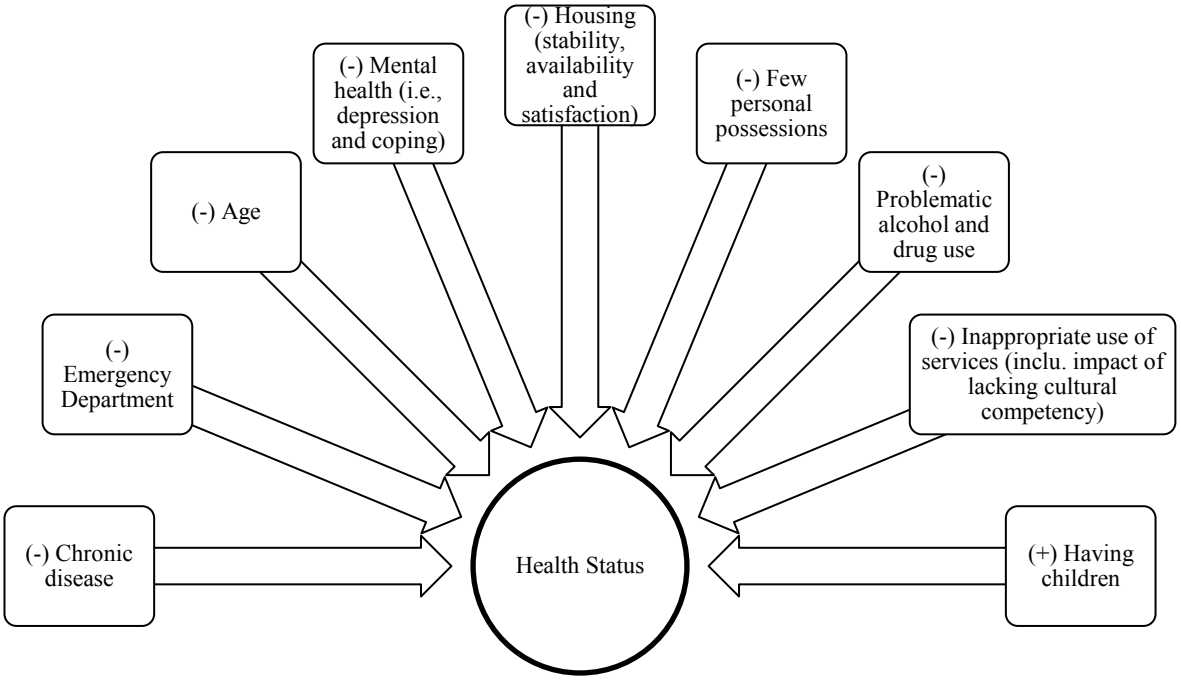
Characteristics most strongly associated with health status ($p \leq .05$)

25% of physical health is explained by:	31% of general health is explained by:	40% of emotional well-being is explained by:
- Chronic disease burden (1-year mortality risk) - Having children - Use of the Emergency Department - Age	- Avoidant coping strategies - Housing stability - Having children - Value of personal possessions	- Depression - Ability to change living situation (shelter) - Overall satisfaction with living situation (shelter)

**Refer to Section 3.2 in Chapter 3 for additional information about specific correlations*

In addition to the items assessed by tools which produced a quantitative value, additional information on characteristics that affect health were also assessed. Inappropriate use of services – including potential to reduce inappropriate service consumption, improve individuals access to services by reducing socio-economic barriers and improving cultural competency were included below. *Note:* Future studies may examine standardized measures of service usage, and include these measures into future regression analysis; as this tool was designed with program stakeholders, the immediate need was for qualitative information to help describe the experience of the individual – and so the study tool was designed with this in mind. The reader will also note, in the figure below, "-" and "+" symbols have been added to show where this characteristic appears to be a burden to (-) or serve as a protective factor (+) of health status.

Figure 4-6. Areas of key health promotion needs



Of note, problematic drug and alcohol dependence approached statistical significance in this study as outlined in Figure 4-6 above. As advised by the thesis committee members, drug and alcohol dependence have significant clinical implications, and on these grounds should be included in options considered to address client needs; therefore, options to address population needs include programs and services to address problematic drug and alcohol use.

In order to prevent delay of access to emergency department services, staff and security should receive cultural sensitivity training that would enable them to

better receive and attend to Edmonton's inner city residents. 11.3% (12/106) of individuals reported that staff and security at the hospital emergency department would single them out for their appearance which reflected their social vulnerability, and discriminate against them by being rude or telling them to seek services elsewhere, and many reported not feeling welcome or avoiding seeking medical as a result (refer to Section 3.4 in Chapter 3 for specific accounts and examples). At a systems level, many years of research have demonstrated that the Emergency Department provides a safety net for those who may otherwise have difficulty accessing regular care, and so services provided to Edmonton's inner city residents should be tailored in part to the needs of our most vulnerable patients who have difficulty accessing care elsewhere and require special considerations for often complex health concerns and treatment needs (for example as described in Cummings, Francescutti, Predy and Cummings, 2006).

4.4 Policy approach within a health promotion context

As this study was developed and carried out with health promotion constructs in mind, recommendations have been shaped to align with the World Health Organization's health promotion prerequisites for achieving better health for all citizens (Mahler, 1981; WHO, 2003) including: reduce exclusion and social disparities in health by undertaking universal coverage reforms; organize health services around people's needs and expectations by undertaking service delivery reforms; integrate health across all sectors through public policy reforms;

pursue collaborative models of policy dialogue through leadership reforms; and increase stakeholder participation.

Examined options address a combination of health and social needs through achieving these prerequisites for health, including those identified in Figure 4-6 above. Building on the scan of relevant policy and interventions (Section 4.2 this chapter), and Alberta's multi-sectoral policy issues and calls for action in Alberta (Section 4.3 this chapter), a review of the literature for health promotion interventions to address the key areas of need identified in the diagram above was completed. Within this Alberta-made context, the recommendations are in alignment with and relevant to the current Alberta policy cycle, and include:

- Expand the Alberta Human Services integrated housing and supports framework model;
- Continue to build integrated Alberta Health Services mental health and addictions supports;
- Expand the Alberta Health Services Community Health Centres model;
- Improve service coordination through the Alberta Health Services, Royal Alexandra Hospital Inner City Health and Wellness Campaign; and
- Invest in Alberta Primary Care Network programs.

The remainder of this chapter further investigates the above policy options and service interventions which are available to address the identified needs – providing information on the current model and context, articulating how current

initiatives serve to address the prerequisites for health, examining current strengths and opportunities for improvement of current initiatives, and positing possible next steps for improving health promotion capacity for Edmonton's inner city residents.

4.5 Option 1: Expand the Alberta Human Services Integrated Housing and Supports Framework model

The Human Services Integrated Housing and Supports Framework is presented (refer to the following Figure 4-7) first as it is the broadest provincial mandate that integrates not-for-profit, health services, and government supports for individuals who reside in Edmonton's inner city and face socio-economic barriers. Alberta Human Services has established the Integrated Housing and Supports Framework (IHSF) Committee to develop an integrated framework to address housing needs of Albertans through a comprehensive integrated system of appropriate options and supports. "The counsel has adopted the definition of 'integration' to guide its work on integrating housing and homelessness systems: integration is interdependence between partners who may have different mandates… [and the counsel intends] to create a seamless system where all partners share responsibility and accountability in achieving agreed upon outcomes"; of note, despite stemming from a housing-centric initiative, the framework below outlines services for individuals who face socio-economic

barriers – including those that have stable housing through to those who face multiple long-term concerns and would be unable to live independently (Alberta Government, 2015c).

Figure 4-7. Demonstrating diversion concepts within an Alberta context (Alberta Government, 2015c)

		Housing situation	Concept	Who shares responsibility?	Services provided
PREVENTION OF HOMELESSNESS	**PRIMARY**	**Housed** (Not at imminent risk of losing housing)	Early Intervention	• Banks (as mortgage lenders) • Landlords • Employers/employment agencies • Education institutions • Community agencies • Government	• Primary prevention activities • Connection to mainstream resources/community supports • Accessible information on services available
		At imminent risk of losing housing (Precariously housed and not yet homeless)	Diversion	• Food banks • Banks • Landlords • Employers/employment agencies • Guidance councillors • Education institutions • Government • Community agencies • Corrections • Women's shelters	• Rental assistance/subsidy • Income supports and other financial assistance • Employment services • Mediation/legal services • Short-term case management • Connection to community supports

PREVENTION OF HOMELESSNESS	**SECONDARY**	**Entry into system** (Program/system entry point; could be explicitly seeking a place to stay but not necessary)	Diversion	Depending on entry point: • Justice/corrections • Child intervention • Alberta Health Services • AISH/income support • Landlords • Outreach programs/community agencies	• Housing search • Case management • Discharge planning • Financial assistance • Rental subsidy • Outreach services • Mental health and addictions • Employment services • Mediation/legal services
		In shelter – short term (In the homeless serving system for the first time; no history with episodic or chronic homelessness)	Diversion	• Homeless shelters and community partners • Alberta Health Services • Income support • Legal Aid • Trustee/guardian • Police • Justice and Solicitor General	• Connection to community supports • Housing search • Case management • Financial assistance • Rental subsidy • Mental health and addictions • Employment services • Mediation/legal services
		In shelter – episodic homelessness (In the homeless serving system)	Rapid re-housing or Housing first	• Homeless shelter, Housing First providers, and community partners • Alberta Health Services • Income support • Legal Aid • Trustee/guardian • Housing agencies • Police • Justice and Solicitor General	• Screening tool/assessment • Mental health and addictions • Employment services • Legal services • Case management • Wrap-around supports
	TERTIARY	**In shelter – chronic homelessness** (In the homeless serving system)	Housing First	• Homeless shelter, Housing First providers, and community partners • Police • Alberta Health Services	• Screening tool/assessnebt • Mental health and addictions services • Employment services • Legal services • Case management • Wrap-around supports
		Unsheltered	Intervention	• Outreach workers, Housing First providers, and community partners • Alberta Health Services	• Assertive engagement • Assessment and referral • Housing first

Recall that 63.2% (67/106) of study participants face a one-year mortality risk of 25%, which is similar to the top 1% of health system users who account for 44% of health care expenditures ($13,977 per year per person; Alberta Health Services, 2012). For example, and in alignment with mounting evidence, “one multi-site study conducted in five Canadian cities found that the average cost of the housing first program was $19,582 per year, and this investment in housing first was offset by an overall reduction to service costs of $42,536” (for example, Mental Health Commission of Canada, 2014, p. 7). For Edmonton’s inner city residents, the *housing first* approach appears to be a sound investment as results may echo those experienced in other municipalities where on average every $10 invested into housing results in an average net savings (including in part health services costs) of $9.60 for participants with high needs and $3.42 for participants with moderate needs (Mental Health Commission of Canada, 2014, p. 23). Within the Alberta context, this means that a further investment in housing first services (to address socio-economic barriers) is likely to reduce the overall cost of delivering services to Edmonton’s inner city residents.

“One of the advantages of stable housing for a group who have high levels of chronic mental and physical illness is the possibility of shifting their care from institutions and crisis-related services to more appropriate planned visits and regular follow-up with community-based services” (Mental Health Commission of Canada, 2014, p. 21). Previous research demonstrates that health benefits are strongest for improvements in housing affordability. More specifically, general

(SF6D) and mental health (MCS) scores improved when appropriate housing was provided (for example, Thomson, Thomas, Sellstrom, Petticrew, 2013; and Holton, E., Gogosis and Hwang, 2010). However, the degree to which health and housing were associated was determined by the type of housing provided – suggesting that the types of programs and services offered alongside housing are important; "potential for health benefits [from housing improvement] may depend on baseline housing condition and careful targeting of the intervention" (Thomson, Thomas, Sellstrom, Petticrew, 2013).

In a housing first model, the reduction of cost results from shift from high cost in patient and crisis-type services to community services such as visits from housing first service providers and phone contacts (Mental Health Commission of Canada, 2014, p. 7). *Housing first* works to rapidly end homelessness and identify unmet needs for more acute or rehabilitative levels of care in the short term, and can be effectively implemented in cities of different size and different cultural contexts (Mental Health Commission of Canada, 2014), making it a suitable solution for Edmonton's inner city residents. However, if this approach is to succeed, there is a need for sensitivity training, or changes to how services are delivered within the health care system, as many of Edmonton's inner city residents shared accounts of the stigma they face when trying to access services – such as the biases held by the security staff at the Royal Alexandra Hospital Emergency Department, that make it difficult to access services without

discrimination and often results in delay in accessing necessary medical treatment and support services.

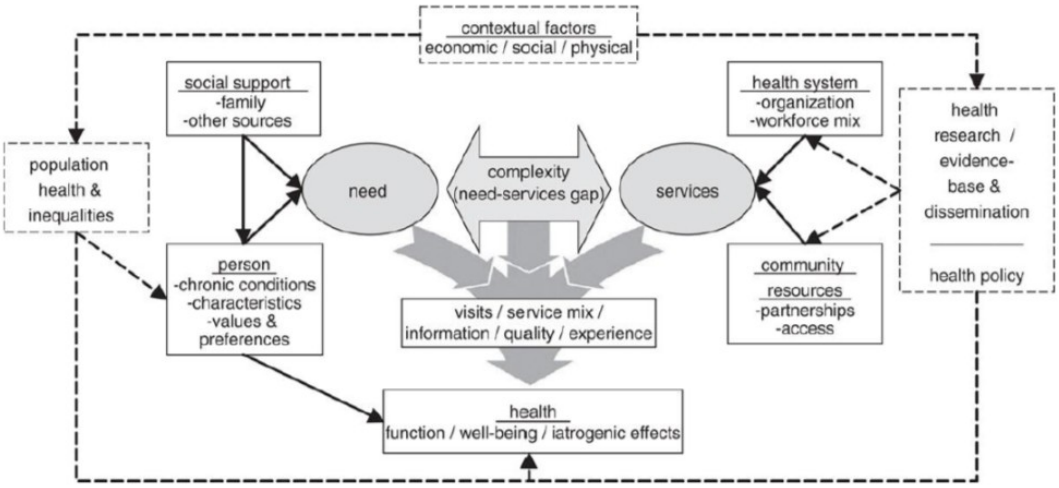
- **RECOMMENDATION 1: Alberta policy makers and decision makers should expand the Alberta Human Services Integrated Housing and Supports Framework model**, which is an evidence-based provincial directive, to actively offer these programs and services to individuals who face multiple socioeconomic barriers as a result of chronic and complex personal factors and circumstances; which will result in improved access to and integration of services by shifting resources away from costly care and crisis programs to community settings where individuals reside.

4.6 Option 2: Continue to build integrated Alberta Health Services mental health and addictions supports

Alberta Health Services (2014c) reported on a successful initiative to improve quality of services and lower costs for an inner city population with mental health and addictions needs – a population very similar to the one addressed in this study. Within Alberta, 5% of the population uses 66% of healthcare resources Alberta Health Services, 2012), and this population includes younger adults and complex older adults with high mental health and addictions needs (Alberta Health Services, 2014c) – a population very similar again to the

study sample In 2014, Alberta Health Services (2014c) reported that the average cost of delivering services for younger adults with addictions and mental health was $32,598 per year and $34,568 for the similar complex older adults (23014c). Of note, a majority of the individuals served in the pilot work were of no fixed address (Alberta Health Services, 2014c). Alberta Health Services (2014c) defines complexity as "the gap between the major system components between individuals' needs and the capacity of healthcare services to support those in need" (Grebowski, D., Schaefer, J., Johnson, K.E., Fischer, H. Moore, S.L., et al., 2014). Modelled from the work by Grebowski et al. (2014), Alberta Health Services (2014b) recommends a systems approach to improve health as seen below:

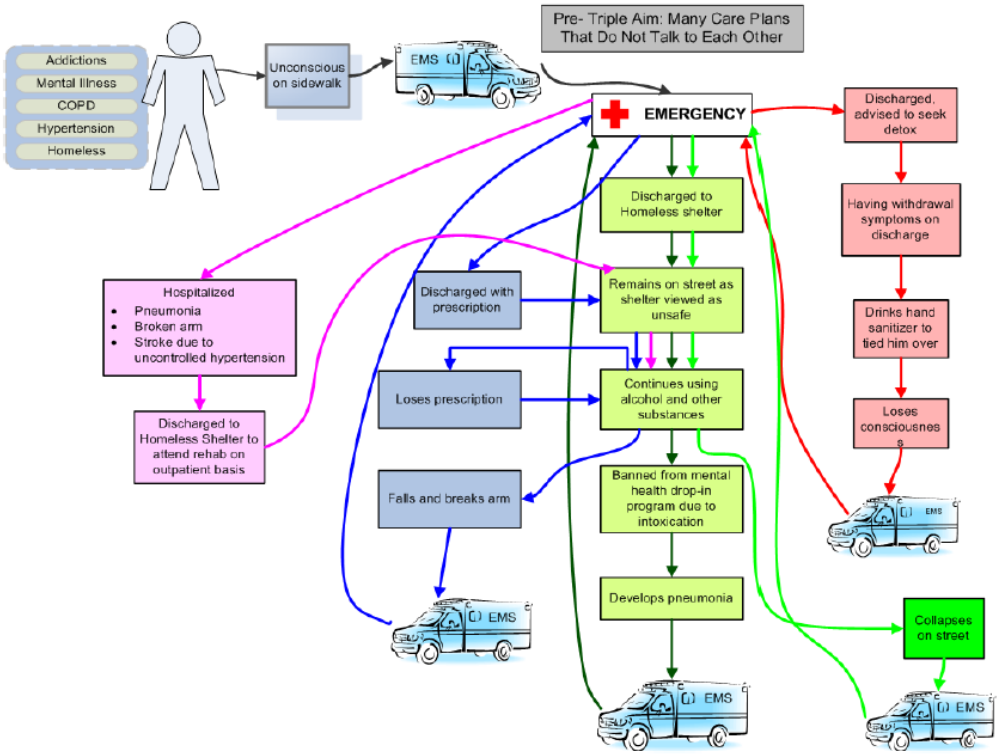
Figure 4-8. Complexity systems model



Individuals with complex health problems often have – in addition to mental health and addictions, chronic disease (such as COPD and hypertension) as well as housing insecurity (Alberta Health Services, 2014c).

Building on the complexity definition adopted by Alberta Health Services (Grebowski, D., Schaefer, J., Johnson, K.E., Fischer, H. Moore, S.L., et al., 2014), the Triple AIM team (Alberta Health Services, 2014c) reviewed administrative data, and created a representation (see diagram below) of a likely care experience for an individual who is within the high needs mental health and addictions population segment.

Figure 4-9. Likely care experience for high needs mental health and addictions



By completing this exercise, Alberta Health Services "actually contributes to creating homelessness. For example, [AHS] may have had a patient who was living independently and 'managing,' has a health incident, provided care from [AHS] and then is no longer appropriate for [AHS] care settings, has active addictions and the only choice [AHS has] was discharging them to a hotel. [AHS] then ends up trying to coordinate care e.g. home care to the hotel" (Alberta Health Services, 2014c).

Within the context of Alberta's Health Action Plan (2013-2016) and budget and according to Alberta Health Services (2014c), the Goal of the Triple AIM initiative in Edmonton follows:

> "Our current healthcare system is not meeting the needs of people with multiple and complex needs, as evidenced by high emergency visits and inpatient admissions, poor continuity of care and outcomes for these individuals and high overall costs. Our aim is to understand the needs and challenges for the segment of patients in the top 5% of costs and design and provide care that meets their needs, improves outcomes and lowers overall costs. We will strive for greater health equity by focusing on people who are homeless or have unstable housing and/or compromised determinants of health."

Alberta Health Services (2014c) recommends that the health and living conditions of high needs inner city residents with mental health and addictions issues will be addressed through the following priorities: provide permanent supportive housing; build a relationship with individuals (patients); address the basic necessities of life; integrate mental health and addictions programs and services; communicate and coordinate a care plan based on the person's priorities among all service partners, inside and outside the health system; and provide emotional support (peer, family, social network). Starting in September 2012, an Alberta Health Services team was established to undertake the Triple AIM Mental Health and Addictions work, comprised of four departments (i.e., Primary Care and Chronic Disease Management, Addiction and Mental Health, Home Care, and Public Health), two health centres (East Edmonton Family Care Clinic and Northeast

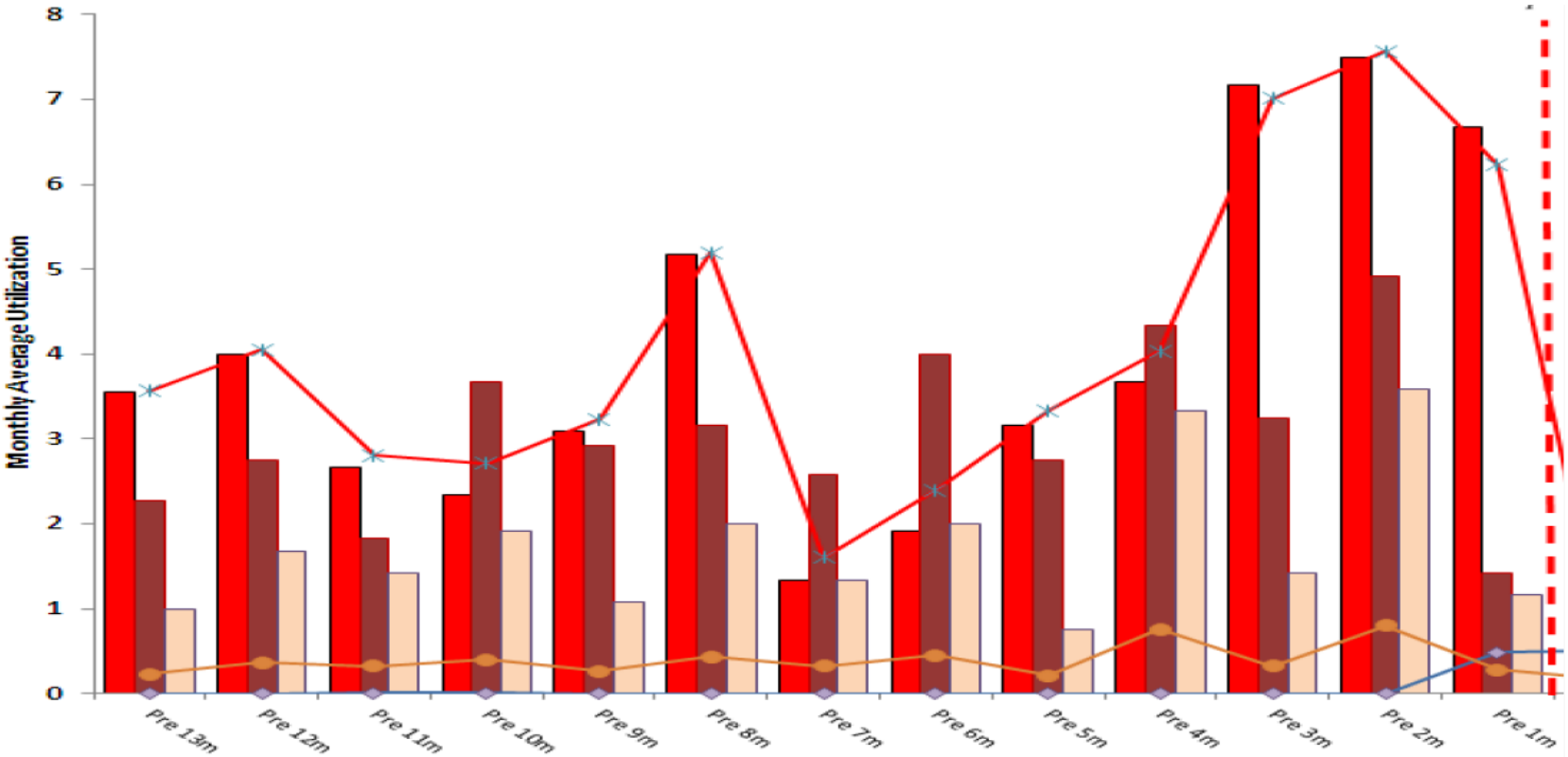
Community Health Centre), the Royal Alexandra Hospital, Emergency Medical Services, Primary Care Networks (i.e., Edmonton Oliver and North Primary Care Networks), Boyle McCauley Health Centre, George Spady Centre, inner city collaborative projects (i.e., Heavy Users of Service Group, and Inner City Health and Wellness Project), and the Mental Health and Addictions Strategic Clinical Network (Alberta Health Services, 2014c).

In pilot results, Alberta Health Services (2014c) team reduced costs for more than half of the individuals who received the above intense integrated community services rather than the repeated use of acute care services (refer to figure below):

Figure 4-10. Average monthly use and costs – pre and post pilot Triple AIM intervention[18]

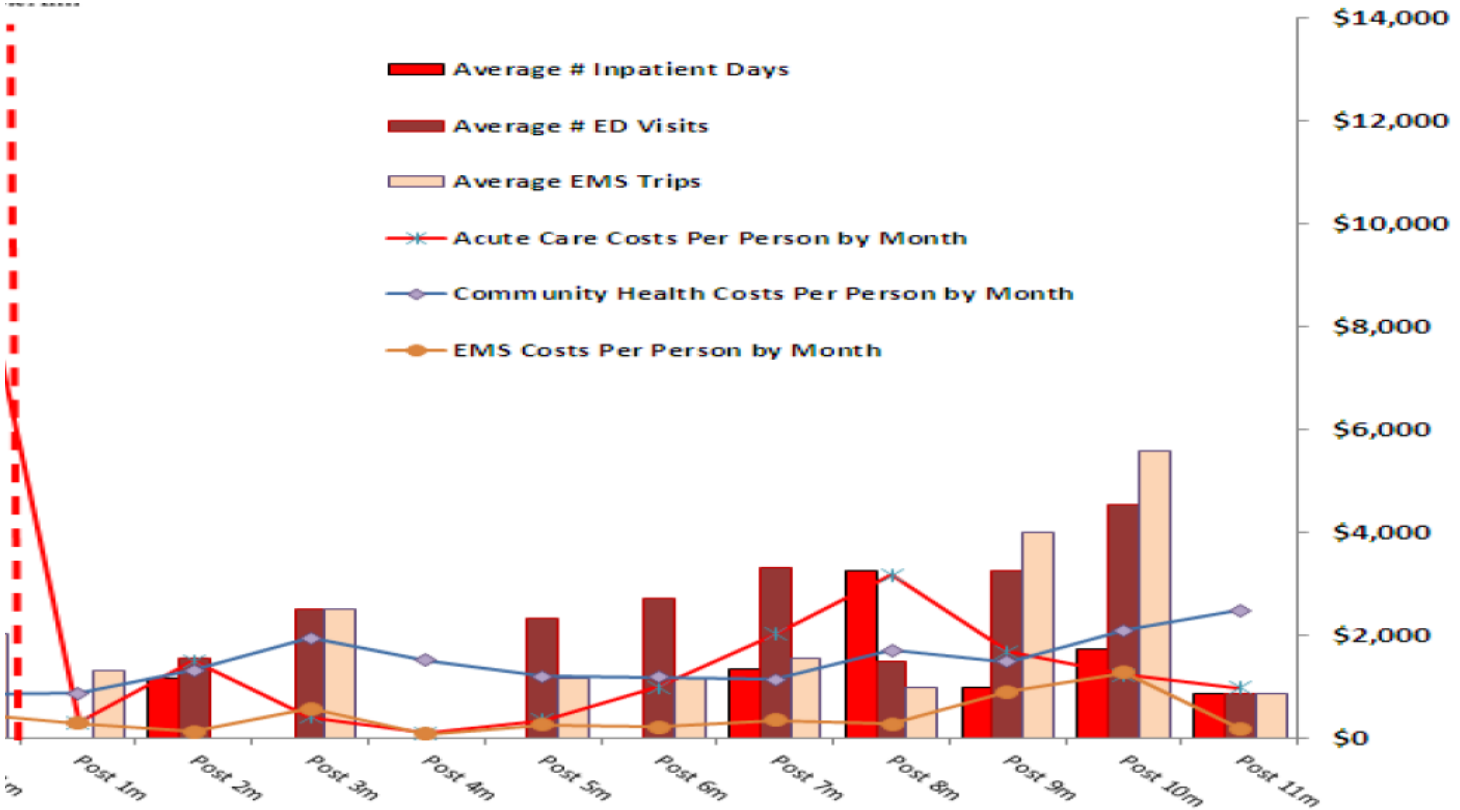
(*Note: The graphic has been split into two pages as this makes the font more legible. The dashed line indicates the point at which the interventions were provided.)*

PRE-Triple AIM Intervention



[18] Triple Aim Addictions, Mental Health and Home Care teams provided care to a sample of 12 clients, and the average monthly costs for acute care, EMS and community utilization are presented in the graph (Alberta Health Services, 2014c)

POST-Triple AIM Intervention



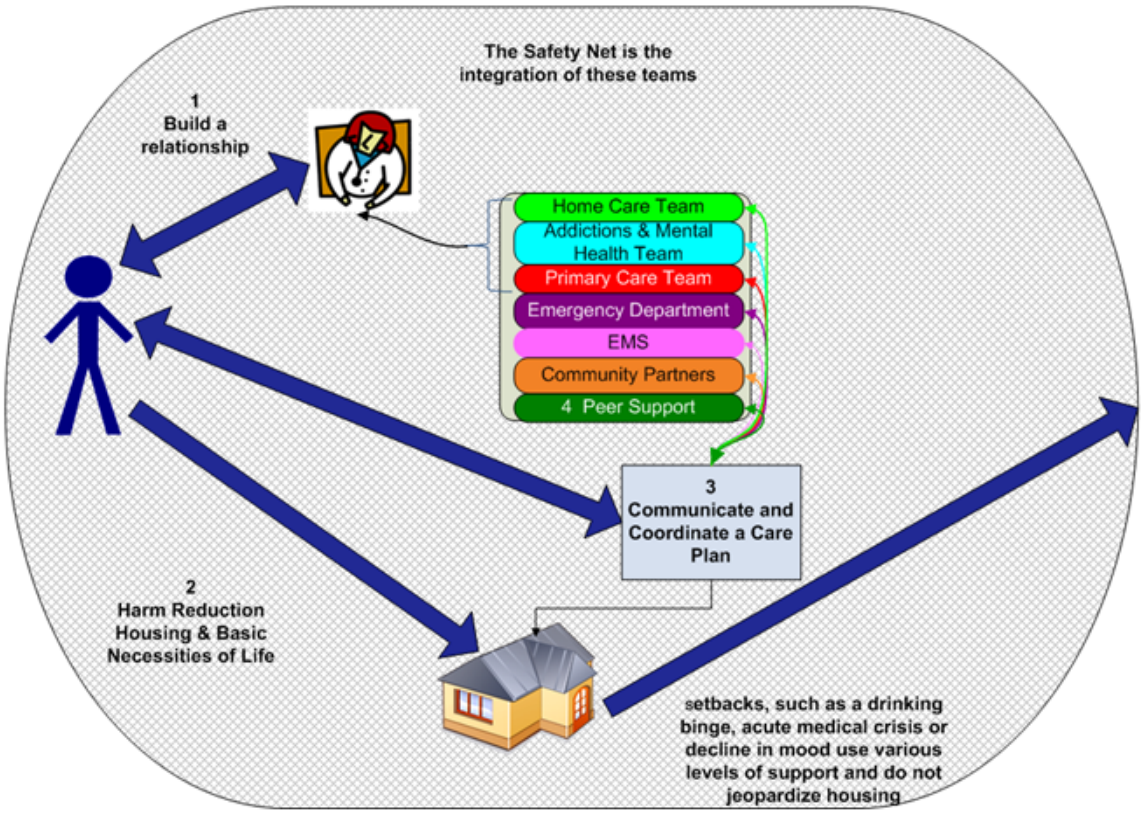
Notes:

- Time point *Pre 13* reflects data 13 months prior to a client's involvement with the Triple AIM process.
- Time point *Post 1* reflects data one month after a client's involvement with Triple AIM, etc.
- Due to different start dates for each client, sample size differs over course of Triple Aim intervention (i.e. *Post 1* n=12; *Post 2, 3, 4, 5, 6 & 7* n=9; *Post 8 &9* n=7; *Post 10* n=5; *Post 11* n=4).
- Averages were calculated based on the number of clients with data at each time point.

In 2013, 275 patients were enrolled in the pilot, and in 2014 an additional 1306 patients have been served; all work focused on increasing continuity of care between the patient and their healthcare team (Alberta Health Services, 2014c). Altogether, this discussion and the positive pilot findings support continued integration of mental health and addictions services that align with identified community health needs.

To address mental health and addictions concerns, as well as other chronic and complex health and socioeconomic concerns, Alberta Health Services engaged in a service redesign to align services with community needs. Following Triple AIM, health services were revised to deliver programs and services more effectively (Alberta Health Services, 2014c), as outlined in the diagram below.

Figure 4-11. Post-Triple AIM revised service delivery model (2014c)



By revising the service delivery model, integrating various levels of support means that housing is not jeopardized, and health care providers are available to address client needs such as binge drinking, acute medical crises, and decline in overall mood (Alberta Health Services, 2014c).

- **RECOMMENDATION 2: Alberta policy makers and decision makers should continue to build and integrate the Alberta Health Services mental health and addictions services,** as supported by evidence-based literature and

demonstrated effectiveness and cost-effectiveness of the mental health and addictions Triple AIM initiative.

4.7 Option 3: Expand the Alberta Health Services community health centres model

Elaborating on the intent of the provincial health services above and in a broader context that values local community needs, the Canadian Association of Community Health Centres has submitted the following five policy directives and budget request to the House of Commons pre-budget consultations conducted by the Standing Committee on Finance (2014), including one regarding Community Health Centres: "establish a federal strategy and funding for Community Health Centres across Canada as a pillar of new investments in healthcare innovation." Further, they purport – based on 1200 centres federally funded in the United States, that these centres save more annually compared to fee-for-service medicine (which is the predominant approach here in Alberta under the Alberta Health Care Insurance Plan), while generating roughly $20 Billion in new annual economic activity (Canadian Index of Wellbeing, 2012). A Canadian comprehensive study was completed by the Wellesley Institute (2009) and resulted in recommendation to earmark $360 Million to kick start 140 new Community Health Centres across Canada. The Canadian Index of Wellbeing furthers this policy directive by recommending the "development of a national

strategy for expanding access to Community Health Centres across the country" (2012).

So then, *what is a Community Health Centre?* These centres bring health care providers – such as physicians, nurses, dietitians, therapists and others together to work in collaborative, inter-professional teams (CAHC, 2014). This model couples the inter-professional care teams with health promotion programs, social services and community services to address illness prevention and well-being, and has demonstrated in several Canadian studies that this model is effective and provides cost-effective care, achieving better overall outcomes than other traditional medical models (Federation of Canadian Municipalities, 2013; Health Council of Canada, 2011; and Canadian Health Coalition, 2011; Shareck, Frolich and Poland, 2013).

In Alberta, there are three community-owned and -operated Community Health centres: the Boyle McCauley Health Centre in Edmonton, and The Alex and CUPS in Calgary. All three centres are based on the national Canadian Association of Community Health Centres model, and offer community-based services to address local needs. In 1979, of the Boyle McCauley community envisioned and fostered the opening of a local health centre, and – to this day, BMHC is the only community owned and operated community health centre in the Edmonton area to provide services to the then under-serviced communities of Boyle Street, McCauley, and Norwood, and provided in a way that acknowledged the uniqueness and complexity of Edmonton's inner city (Boyle McCauley Health

Centre, 2009). This centre continues this legacy by continuing to adapt and evolve programs and services to reflect and meet the needs of the local community; currently providing a medical clinic, dental clinic, foot care clinic, mental health, health advocacy, laboratory and diagnostic services, chiropractic clinic, acupuncture, optometry, a needle exchange, safe house and resource centre for those involved in street prostitution, a women's health clinic, a community nursing station, and supports for individuals (in coordination with the Homeward Trust Pathways to Housing program) who are chronically homeless, and have mental health and addictions issues (Boyle McCauley Health Centre, 2009). In the past year, the centre provided 104,977 requests for services to these many programs to effectively meet the needs of a client group that is challenged by multiple barriers, including poverty, homelessness, mental health, multiple addictions, and social isolation (Boyle McCauley Health Centre, 2009).

The second Community Health Centre in Alberta was established over 40 years ago, and provides primary medical care and housing supports to assist with complex and chronic health and social issues experienced by Calgary's most vulnerable citizens (The Alex, 2015). In alignment with health promotion principles, The Alex programs and services seek to address determinants of health, to support the whole individual including physical, mental emotional and economic well-being (not just the absence of disease; The Alex, 2015). The centre offers primary health care – including chiropractic care, physiotherapy, massage therapy, a youth drop-in centre, a breast feeding clinic and nutrition support, and a

mobile health unit (a bus that travels to eight urban sites every week) to provide local health care (The Alex, 2014). The centre delivers a housing first program to individuals who face complex mental and physical heath, and addictions issues; as these are observed barriers which have resulted in homelessness (The Alex, 2014). In alignment as well with the Alberta Integrated Housing and Supports Framework (refer to option 1 previous), the centre provides many health and housing programs and has demonstrated program cost-effectiveness by reducing crisis, involvement with the justice system, Emergency Department visits, and mental health facility visits (The Alex, 2015).

And lastly and for almost 30 years, the Calgary Urban Project Society – known as "CUPS," provides integrated health care, education and housing services to empower people to overcome challenges associated with poverty and reach their full potential (CUPS, 2015). Between April 2013 and March 2014, CUPS provided supports to over 7000 individuals – including primary care, women's health, prenatal, pediatric, mental health care, family and parent education, education bursaries, and housing first services including case management, graduated rent program and community development – among other supports and services (CUPS, 2015). CUPS provides outreach medical care to six Calgary shelters – including The Calgary Drop In Centre, The Mustard Seed, Calgary Women's Emergency Shelter, Brenda's House, Alpha House, and Awo Taan Healing Lodge (CUPS, 2015). CUPS is a collaborative model that partners with community leaders, individuals, companies and various levels of government

to deliver compassionate, high quality care to low-income Calgarians; where for example 11% of funding was received from corporations, 13% from individuals, 33% from foundations and charities, and 44% from government (CUPS, 2015). In alignment with the overarching provincial policy directives, Alberta Health Services (2014c) has studied the inner city patient's understanding of the community of service providers: We "need to recognize the importance of 'community' in the lives of people – including those who are homeless. [Alberta Health Services] realized that we incorrectly assumed homeless individuals did not have a 'community' and that 'community' is defined by the individual" (Alberta Health Services, 2014c).

- **RECOMMENDATION 3: Alberta policy makers and decision makers should expand the Alberta Health Services Community Health Centres Model,** as recommended by the Canadian Association of Community Health Centres, and demonstrated long-term effectiveness and cost-effectiveness of the model by evidence-based literature and through three existing sites.

4.8 Option 4: Improve service coordination through the Alberta Health Services, Royal Alexandra Hospital Inner City Health and Wellness Campaign, The Alex and CUPS

With the support of Alberta Health Services, the Royal Alexandra Hospital Addiction recovery and Community Health (ARCH) team aims to assist patients at the hospital who have an active substance use issue and/or are dealing with social inequity (Alberta Health Services, 2014b). This team assists inner city patients with (Alberta Health Services, 2014b): complicated drug and alcohol withdrawal; assessment and treatment recommendations for any substances of misuse; counseling and motivational interviewing; initiation or maintenance of opioid agonist therapy (e.g. methadone or buprenorphine); harm reduction supplies and overdose prevention; linkage to primary and community based care; housing, health care coverage, identification; and health promotion and disease prevention (Alberta Health Services, 2014b). Patients are referred to the ARCH Team from any member of the healthcare team (Alberta Health Services, 2014b). ARCH is a part of the Inner City Health and Wellness (ICHW) program funded by the Royal Alexandra Hospital Foundation (2014b).

At this time, The Inner City Health and Wellness Program (ICHW) is a three-year pilot project that unites a host of partner agencies and social service organizations. Stakeholders and medical advisors have direct input into the program through a series of medical, research and community oversight

committees (Alberta Health Services, 2013b). The following are key talking points developed and provided by this campaign (Alberta Health Services, 2013b):

- "Through this program, the RAH aims to improve health outcomes for high-risk patients through excellence in addictions management, screening, intervention and effective referrals to community based healthcare providers.
- "Many of these patients are at high risk due to a combination of living in poverty, mental health issues, unstable housing, and struggles with addictions. The current model of healthcare does not effectively meet the needs of this population, resulting in poor health outcomes and inefficient resource use.
- "By connecting hospital and community services with those patients in greatest need, the ICHW program seeks to create a new model of care and assistance for socially vulnerable patients at risk.
- "The clinical or patient-care team part of the program is called the Addiction Recovery and Community Health (ARCH) Team. When the program is fully operational, the team will provide consultation and advice around the management of substance use issues for patients admitted to the Royal Alexandra hospital or seeking care in the Emergency Department.
- "The ARCH Clinic was officially opened in July 2014 and since then the Clinic Team has had more than 200 patient visits. In addition, unattached patients are being linked with primary care provider and other services in the community to ensure that they have ongoing care for their chronic medical

issues, including their addiction. When there is a significant wait time for services in the community, the ARCH Team will bridge patients via the ARCH Clinic located on the ground floor of the Community Services Centre on the Royal Alexandra Hospital campus. It is estimated that the program will manage 1000 patient visits per year.

- "Through the ICHW Research Program, new knowledge about treatment and patient care will be created. One of the goals is to translate the knowledge created by this research initiative into the appropriate best healthcare practices and public health policies both at the Royal Alexandra hospital and in the community."
- "By sharing these research results with Alberta Health, Human Services and Alberta Health Services, the intent is to foster long-term improvements to the way in which Emergency Departments and the acute care setting are staffed and funded to better serve high-risk patients and more effectively address their healthcare needs.
- "Among the many longer-term outcomes the ICHW program strives for are a healthier inner city population and significant cost savings and service improvements to healthcare delivery for the benefit of all Edmontonians and Albertans."

Within the local community, the Royal Alexandra Hospital Addiction Recovery and Community Health (ARCH) team provides capacity to meet the inner city health and socioeconomic needs identified in this needs assessment; and

extending the initial three-year pilot work into a formal initiative will increase the likelihood that the needs of Edmontonians continue to be met.

- **RECOMMENDATION 4: Alberta policy makers and decision makers should formalize the Alberta Health Services Alberta Health Services, Royal Alexandra Hospital Inner City Health and Wellness Campaign and the Royal Alexandra Hospital Addiction Recovery and Community Health (ARCH) team by providing ongoing and sustained funding** as the supports and services offered align with the needs identified in this survey, and many of the individuals residing in Edmonton's already access this site for health care services and as such this would provide an opportunity to implement a Community Health Centre model (see Option 3 above for additional information) to address complicated drug and alcohol withdrawal; assessment and treatment recommendations for any substances of misuse; counseling and motivational interviewing; initiation or maintenance of opioid agonist therapy (e.g. methadone or buprenorphine); harm reduction supplies and overdose prevention; linkage to primary and community based care; housing, health care coverage, identification; and health promotion and disease prevention

4.9 Option 5: Invest in Alberta Primary Care Network programs

Primary Care Networks (PCNs) are groups of family doctors that work with Alberta Health Services and other health professionals (such as nurses, dietitians and pharmacists) to coordinate the delivery of primary care services for their patients; where the Alberta government provides supplementary funding to deliver enhanced services to meet the local needs of patients (Alberta Government, 2105d). In Edmonton, the Edmonton North Primary Care Network is affiliated with the Boyle McCauley Health Centre; and – through this affiliation, gains access to patient services including a mental health program, diabetes management program, weight management program, clinical and specialty services, active living programs, and health information – for example (2015). Recently, for example, the Boyle McCauley Health Centre saw a need for a wound care clinic; in addition to wound care, the centre also receives outreach supports and some support from the multi-disciplinary team in the clinic (Boyle McCauley Health Centre, 2009).

Across the province, the Red Deer Primary Care Network provides services to vulnerable individuals – including those who are homeless and involved in the housing first project (2013). This clinic provides non-urgent medical care – including prescription renewal, laboratory and diagnostics, wound care, minor injuries treatment, health assessment and screening, chronic disease management, sexually transmitted infections treatment, birth control counselling

and prescribing, referrals to other health services including specialists, referrals to inner city social services and agencies, assistance obtaining an Alberta Health Care Insurance Plan benefits number, referrals to Primary Care Network mental health counsellor and social worker, and referrals to the Central Alberta Aids Network Society for safer drug use and safer sex supplies (Red Deer Primary Care Network, 2013). The network provides referrals and navigation support to other service sectors, agencies and practitioners to support continuity and access to care. Patients are satisfied with the Street Clinic, and some comments include (as shared on the Red Deer Primary Care Network website, 2013):

- "The nurse is a good ear and comfort. I am comfortable with my issues here and I like the one on one. I don't have a doctor and this is ok. I come here and am in and out in five minutes."
- "I think the staff, the ones I've dealt with the most, are fabulous."
- "The only thing I would like to see is a full time doctor on the board because I know the Nurse Practitioner can't prescribe certain things."

This clinic is walk-in and requires no appointment, and offers services during selected daytime hours, Monday through Thursday (Red Deer Primary Care Clinic, 2013).

Similar to the first two, the Calgary West Central Primary Care Network Other Primary Care Networks, in addition to the Edmonton North, Calgary West Central, and Red Deer, may very well provide services to inner city individuals; however, this information was not publicly available online, and future studies

may want to explore the existing and potential for service delivery to meet the unique needs of the study population. “The selection of team members should be driven by patient population,” said Dr. van der Merwe who works closely with a pharmacist, an RN and a BHC in the Mission-based clinic he shares with two other physicians (Calgary West Central Primary Care Network; CWCPCN, 2015).

The Calgary West Central Primary Care Network inner-city clinic serves over 4000 patients of fifty ethnicities and all ages (CWCPCN, 2015). According to Shawn Lee, a pharmacist, “We communicate together and collaborate for better patient outcomes, particularly with complex types of patients” (CWCPCN, 2015). One of the patients who has benefitted from the care of a CCT was diagnosed with Type 2 diabetes, and has received care from her family physician and a nurse to keep her diabetes under control; according to Lee, “The nurse was a life-saver. She taught me what diabetes was all about, as well as the importance of diet and exercise. She always gave me very insightful and concrete information – the help and support I got from her was just fantastic” (CWCPCN, 2015). A third and final testimony is provided on the website: Kelli McMillan, a behavioural health consultant, explained that the patient was reluctant to discuss his depression, but with a proper diagnosis of post-traumatic stress syndrome, he made significant progress in a short time; McMillan says, “I think it was the fact that he had a team of professionals all caring for him and supporting him that made the difference. Now his physician can target his medical problems and the rest of the collaborative care team can help alleviate lifestyle, mental health and

pharmacological concerns. It's been very rewarding to work as a team to improve this patient's overall quality of life" (CWCPCN, 2015). Building on initial community-based health programs and services, in 2013, the Alberta Medical Association provided a report to the Minister of Health, within which a possible future strategy included among others: *Primary Care Network outreach clinics in inner city areas (possibly an alternative funding model) to provide more comprehensive and consistent care, and to build trusting relationships with patients in order to link them with a family physician*. Within the context of this publication, the policy direction is supported by a goal to ensure that every Albertan has a family physician and a health home, which includes *difficult to reach Albertans*, among others (Alberta Medical Association, 2013).

- **RECOMMENDATION 5: Alberta policy makers and decision makers should support the Alberta Medical Association's recommendation to the Minister of Health** to deliver outreach clinics in inner city areas to difficult to reach Albertans, and explore alternative funding models, to provide more comprehensive and consistent care, and enable patients to receive appropriate supports through a family physician and multi-disciplinary team

4.10 Recommendations and future considerations

To sum up, internationally, nationally, provincially and locally, evidence supports continued delivery and enhancement of Alberta policy directives and initiatives to address Edmonton's inner city health needs and improve health status through addressing health and social needs and reducing socio-economic barriers. To sum up, there is good evidence that informed the development of this the following Alberta initiatives:

- Expand the Alberta Human Services integrated housing and supports framework model;
- Continue to build integrated Alberta Health Services mental health and addictions supports;
- Expand the Alberta Health Services Community Health Centres model;
- Improve service coordination through the Alberta Health Services, Royal Alexandra Hospital Inner City Health and Wellness Campaign, The Alex and CUPS; and
- Invest in Alberta Primary Care Network programs.

By doing so, we will continue to build capacity to achieve the World Health Organization's health promotion prerequisites for achieving better health for all citizens (1981; WHO, 2003) including: reduce exclusion and social disparities in health by undertaking universal coverage reforms; organize health services around people's needs and expectations by undertaking service delivery

reforms; integrate health across all sectors through public policy reforms; pursue collaborative models of policy dialogue through leadership reforms; and increase stakeholder participation. The WHO purports that health will be improved by organizing health services around people's needs and expectations by undertaking service delivery reforms (2015).

Bibliography

Agency for Healthcare Research and Quality (2013). Strategies to address frequent Emergency Department use, published to AHRQ website on October 23, 2013. Last accessed July 3, 2014 from innovations.ahrq.gov/issue.aspx?id=165.

Ahmed, A.T., Mohammed, S.A. & Williams, D.R. (2007). Racial discrimination & health: Pathways and evidence. *Indian Journal of Medical Research, 126*, pp. 318-27.

Alberta Government (2013). Alberta's Social Policy Framework. Last accessed March 8, 2015 from socialpolicyframework.alberta.ca/files/documents/ahs-nonannotatedfrmwrk-webfinal.pdf

Alberta Government (2015). What isn't covered by the AHCIP, online Alberta Health publication. Last accessed March 8, 2015 from http://www.health.alberta.ca/AHCIP/what-is-not-covered.html

Alberta Government (2015b). Drug coverage and services, online Alberta Health publication. Last accessed March 18, 2015 from http://www.health.alberta.ca/services/drug-coverage-services.html

Alberta Government (2015c). Alberta Interagency Council on Homelessness; History, Mandate and Council Priorities. Last accessed March 8, 2015 from http://humanservices.alberta.ca/homelessness/14601.html

Alberta Government (2015d). Primary Care Networks. Last accessed March 12, 2015 from http://www.health.alberta.ca/services/primary-care-networks.html

Alberta Health and Wellness (2006). Report on the health of Albertans. Last accessed July 3, 2014 from www.health.alberta.ca/documents/Health-of-Albertans-2006.pdf

Alberta Health Services (2011). A literature review of collaborative mechanisms and healthy public policy advocacy, Healthy Public Policy report, p. 1. Last accessed March 8, 2015 from http://www.albertahealthservices.ca/poph/hi-poph-hpp-literature-review-collaborative-mechanisms-and-advocacy-for-ph.pdf

Alberta Health Services (2012). High cost users – total health care costs (excluding continuing care and allied health by percent of population, Excel spreadsheet percentile expenditures Alberta 201011.xslx

Alberta Health Services (2013). Preliminary examination of high cost Albertans, unpublished power point presentation.

Alberta Health Services (2014). Action on: emergency we're improving access, p. 2. Last accessed July 3, 2014 from http://www.albertahealthservices.ca/innov/ne-action-er-booklet.pdf

Alberta Health Services (2014b). Addiction Recovery and Community Health (ARCH) Team, brochure.

Alberta Health Services (2014c).Triple AIM in Edmonton: driving quality, lowering cost.

Alberta Innovation and Advanced Education (2014). Campus planning resource. Last accessed July 3, 2014 from http://www.eae.alberta.ca/post-secondary/policy/capr.aspx

Alberta Medical Association (2013). PCN evolution; vision and framework, report to the Minister of Health, Primary Care Alliance Board. Last accessed March 12, 2015 from http://www.health.alberta.ca/documents/PHC-PCN-Evolution-Framework-2013.pdf

Alberta Treasury Board and Finance (2012). 2011 Census of Canada: families, households and marital status; highlights of living arrangements and families. Last accessed July 3, 2014 from www.finance.alberta.ca/aboutalberta/census/2011/2011-census-living-arrangements-and-families.pdf

Asada, Y. & Kephart, G. (2007). Equity in health services use and intensity of use in Canada, *BMC Health Services Research, 7*, p. 41.

Averett, S.L., Argys, L.M. & Sorkin, J. (2010). In sickness and in health: an examination of relationship status and health using data from the Canadian National Public Health Survey. R*ev Econ Household, 11*, pp. 599-633. Last accessed July 3, 2014 from link.springer.com/article/10.1007/s11150-012-9143-z#page-1

Axinn, W., Barber, J., & Ghimire. (1997). The neighbourhood history calendar: A data collection method designed for dynamic multi-level modeling. In A. Raftery (Ed.), *Sociological methodology* (pp. 355-392). Boston, MA: Blackwell Publishers.

Babor, T., Higgins-Biddle, J., Saunders, J. & Monteiro, M. (2001). AUDIT: The Alcohol Use Disorders Identification Test, Guidelines for use in primary care. (2 ed.) Document released by the World Health Organization, Department of Mental Health and Substance Dependence.

BC Housing (2012). Emergency Shelter Program; program framework. Last accessed March 12, 2015 from http://www.bchousing.org/resources/Partner_Resources/Program_Resources/Emergency_Shelter_Program/ESP_Program_Framework.pdf

Belli, R., Shay, W., & Stafford, F. (2001). Event history calendars and question list surveys: A direct comparison of interviewing methods. *Public Opinion Quarterly, 65*, pp. 45- 74.

Berman, A., Bergman, H., Palmstierna, T. & Schlyter, F. (2005). Evaluation of the Drug Use Disorders Identification Test (DUDIT) in criminal justice and detoxification settings and in a Swedish population sample. *European Addiction Research, 11*, pp. 22-31.

Berkman, L.F., Glass, T., Brisette, I. & Seeman, T.E. (2000). From social integration to health: Durkheim in the new millennium. *Soc Sci Med,*

51(6), pp. 843-857. Last accessed July 3, 2014 from www.ncbi.nlm.nih.gov/pubmed/10972429

Bernard, H.R. (2013). *Social Research Methods: Qualitative and Quantitative Approaches*, p.524, Thousand Oaks, CA; Sage Publications Inc.

Bjorner, J, Kosinski M, Raju A. (2009). Evaluation of the Validity of BDI Scores Estimated from the SF-36 Mental Health Scale. Paper presented at International Society for Quality of Life Research, New Orleans.

Booth, B., Walton, M., Barry, K., Cunningham, R., Chermack, S. et al. (2010). Substance use, depression, and mental health functioning in patients seeking acute medical care in an inner-city ED. *Journal of Behavioural Health Services and Research* (online publication). Last accessed February 14, 2011 from www.springerlink.com.

Bowen, S. (2001). "Certain circumstances"; issues in equity and responsiveness in access to health care in Canada. Health Canada. Last accessed March 12, 2015 from http://www.hc-sc.gc.ca/hcs-sss/pubs/acces/2001-certain-equit-acces/index-eng.php#part6a

Boyle Street Community Services (2014). Mission and history, webpage summary. Last accessed July 3, 2014 from boylestreet.org/who-we-are/mission-and-history/

Boyle McCauley Health Centre (2009). Website. Last accessed March 12, 2015 from http://www.bmhc.net/

Burt, M.R. (2001). *Helping America's Homeless*. Washington, DC: Urban Institute Press.

Calgary Urban Project Society (CUPS; 2015). Website. Last accessed March 12, 2015 from http://cupscalgary.com/

Calgary West Central Primary Care Network (2015). Website. Last accessed March 12, 2015 from https://www.pcnpmo.ca/Pages/default.aspx

Cameron, E., Mathers, J. & Parry, J. (2006). 'Health and wellbeing': Questioning the use of health concepts in public health policy and practice, *Critical Public Health, 16*(4), pp. 347-354.

Campbell, D., King-Shier, K., Hemmelgarn, B.R., Sanmarten, C., Ronksley, P.E. (2014). Self-reported financial barriers to care among patients with cardiovascular-related chronic conditions, Statistics Canada, Government of Canada. Last accessed March 8, 2015 from http://www.statcan.gc.ca/pub/82-003-x/2014005/article/14005-eng.htm

Campbell, D., Ronksley, P., Barnabe, C., et al. (2012). The association of enrolment in Primary Care Networks on diabetes care and outcomes in low income and First Nations Albertans. *Open Medicine*, 6(4): E155-65.

Canadian Alliance to End Homelessness (2015). 10 year plan to end homelessness. Last accessed March 12, 2015 from http://www.caeh.ca/a-plan-not-a-dream/10-year-plan-to-end-homelessness/

Canadian Health Coalition (2011). Secure the Future of Medicare: A Call to Care. Brief to the Senate Standing Committee on Social Affairs, Science and

Technology on its Review of the Progress in Implementing the 2004 Health Accord.

Canadian Index of Wellbeing (2012). How are Canadians Really Doing? The 2012 CIW Report. Waterloo, ON: CIW and University of Waterloo.

Canadian Institute for Health Information (CIHI; 2004). Health Care in Canada 2004, p. 93. Ottawa, Ont.: CIHI. Last accessed February 4, 2011 from secure.cihi.ca/ews/en/index.jsp

Canadian Institute for Health Information (CIHI; 2009). Health Care in Canada 2009: A Decade in Review, pp. 48-9. Ottawa, CA: CIHI.

Canadian Institute for Health Information (CIHI; 2012). Canada's health care spending growth slows; provincial and territorial government health expenditure expected to grow 3.1%, lowest since 1997. Last accessed July 3, 2014 from www.cihi.ca/cihi-ext-portal/internet/en/document/spending+and+health+workforce/spending/release_30oct12

Canadian Medical Association (2010). Health care transformation in Canada; change that works, care that lasts. Last accessed March 12, 2015 from http://policybase.cma.ca/dbtw-wpd/PolicyPDF/PD10-05.PDF

Carver, C. (1997). You want to measure coping but your protocol's too long: consider the Brief COPE. *International Journal of Behavioural Medicine, 4*(1), 92-100.

Caspi, A., Moffitt, T., Thornton, A., & Freedman, D. (1996). The life history calendar: A research and clinical assessment method for collecting

retrospective event-history data. *International Journal of Methods in Psychiatric Research, 6*, pp. 101-114.

Centre for Health Research on Inner City Health (CRICH; 2015). About CRICH. Last accessed March 7, 2015 from http://www.stmichaelshospital.com/crich/

Charlson, M.E., Charlson, R.E., Peterson, J.C., Marinopoulos, S.S., Briggs, W.E. et al. (2008). The Charlson comorbidity index is adapted to predict costs of chronic disease in primary care patients. Journal of Clinical Epidemiology, 61(12). Last accessed March 12, 2015 from http://www.sciencedirect.com/science/article/pii/S0895435608000309

CMHC (2011). Regina Healthy Housing ™ demonstration project. Last accessed March 12, 2015 from http://www.cmhc-schl.gc.ca/en/inpr/afhoce/afhoce/prpr/upload/66105_EN_w.pdf

Commonwealth Department of Health and Aged Care. (CDHAC; 2000). Promotion, Prevention and Early Intervention for Mental Health—A Monograph. Canberra, Australia: Author. Last accessed November 8, 2014 from http://auseinet.flinders.edu.au/files/resources/other/monograph.pdf

Cummings, G.E., Francescutti, L.H., Predy, G. & Cummings, G. (2006) Health promotion and disease prevention in the emergency department: a feasibility study. *CJEM, 8*(2), pp. 100-105. Last accessed March 8, 2015 from http://www.ncbi.nlm.nih.gov/pubmed/17175870

Dalstra, J.A., Kunst, A.E., Borrell, C., et al. (2005). Socioeconomic differences in the prevalence of common chronic diseases: an overview of eight European countries. *International Journal of Epidemiology*, 34(2): 316-26.

Dietitians of Canada (2005). Individual and household security in Canada. Positions of dietitians of Canada, 2008, Last accessed March 12, 2015 from www.dietitians.ca/Downloadable-Content/Public/cfs-position-paper.aspx

Dong, K., Cooper, R., Salvalaggio G., Newton, A., Vandenberghe, C., et al. (work in progress). Satisfaction with Care and Needs Assessment Survey of Homeless or Substance Using Adults Presenting to the Emergency Department. Work in progress at the Royal Alexandra Hospital, Alberta Health Services, Edmonton, Alberta, Canada.

Dressler, W. (1980). Coping dispositions, social supports and health status. *Ethos, 8*(2), 146-171.

Dunlop, S., Coyte, P.C. & McIsaac, W. (2000). Socio-economic status and the utilisation of physicians' services: results from the Canadian National Population Health Survey. *Soc Sci Med, 51*(1), pp. 123-133. Last accessed July 3, 2014 from www.ncbi.nlm.nih.gov/pubmed/10817475

Fallows, J. (2011). System of systems: working on the horizon. Calgary, Alberta: Creative Express Corporation.

Fang, R., Kmetic, A., Millar, J. & Drasic, L. (2009). Disparities in chronic disease among Canada's low-income populations. *Prev Chron Dis, 6*(4), A115.

Last accessed July 3, 2014 from http://www.cdc.gov/pcd/issues/2009/oct/pdf/08_0254.pdf

Federation of Canadian Municipalities (2013). Op cite.

Fleishman, J.A., Cohen, J.W., Manning, W.G. & Kosinski, M. (2006). Using the SF-12 health status measure to improve predictions of medical expenditures. *Med Care, 44*(5 Suppl), pp. I54-I63. Last accessed July 3, 2014 from www.ncbi.nlm.nih.gov/pubmed/16625065

Freedman, D., Thornton, A., Camburn, D., Alwin, D., & Young-DeMarco, L. (1988). The life history calendar: A technique for collecting retrospective data. *Sociological Methodology, 18*, pp. 37-68.

Freimuth, V.S. & Mettger, W. (1990). Is there a hard to reach audience? Public Health Reports, 105(3), p.232.

Fung, T. (2008). Health status assessment tools, literature review, Alberta Health Services, unpublished work.

Fung, T. (2010). SF12v2® pilot in the Regional Diabetes and Weight Wise programs, Alberta Health Services, unpublished work.

Fung, T. (2012, 2013 and 2014). SF12v2® pilot in three Alberta Primary Care Networks, unpublished work.

Gadermann, A.M., Hubley, A. M., Russell, L. B., & Palepu, A. (2013). Subjective health-related quality of life in homeless and vulnerably housed individuals and its relationship with self-reported physical and mental health status. *Social Indicators Research, 116*, pp. 341-352. Last accessed

July 3, 2014 from link.springer.com/article/10.1007/s11205-013-0302-2#page-1

Gindi, R.M., Cohen, R.A. & Kirzinger, W.K. (2012). Emergency room use among adults aged 18-64: early release of estimates from the National Health Interview Survey, January – June 2011. Last accessed March 12, 2015 from http://www.cdc.gov/nchs/data/nhis/earlyrelease/emergency_room_use_january-june_2011.pdf

Glasziou, P., Irwig, L. & Mant, D. (2005). Monitoring in chronic disease: a rational approach. *British Medical Journal*, 330(7492), pp. 644-8.

Government of Saskatchewan (2012). HealthLine. Last accessed March 8, 2015 from www.health.gov.sk.ca/healthline/

Gelberg, L., Gallagher, T.C. & Koegel, P. (1997). Competing priorities as a barrier to medical care among homeless adults in Los Angeles, *American Journal of Public Health, 87*, pp. 217-20.

Goering, P., Veldhuizen, S., Watson, A., Adair, C., Kopp, B., et al. (2014). National At Home/Chez Soi, final report. Calgary, AB: Mental Health Commission of Canada. Last accessed March 8, 2015 from www.mentalhealthcommission.ca

Government of Saskatchewan (2013). Housing, Social Services. Last accessed March 12, 2015 from http://socialservices.gov.sk.ca/housing

Government of Saskatchewan (2013b). Mental health and addictions, Health. Last accessed March 12, 2015 from http://www.health.gov.sk.ca/mental-health-and-addictions

Granovetter, M.S. (1973). The strength of weak ties. American Journal of Sociology, 78(6), pp. 1360-1380. Last accessed July 3, 2014 from www.immorlica.com/socNet/granstrengthweakties.pdf

Grebowski, D., Schaefer, J., Johnson, K.E., Fischer, H. Moore, S.L., et al. (2014). A conceptual model of the role of complexity in the care of patients with multiple chronic conditions. Medical Care, 52 Suppl 3, pp. S7-S14. Last accessed February 28, 2015 from http://www.ncbi.nlm.nih.gov/pubmed/24561762.

Grover, C.A. & Close, R. (2009). Frequent users of the Emergency Department: risky business. *West J Emerg Medicine*, 10(3), pp. 193-194. Last accessed March 12, 2015 from http://www.ncbi.nlm. nih.gov/pmc/articles/ PMC2729222/

Haas, E.M. (2015). Nutritional programs for alcohol detoxification. Global Healing Centre. Last accessed March 12, 2015 from http://www.globalhealingcenter.com/addictions/nutritional-programs-for-alcohol-detoxification

Hayward, K. & Colman, R. (2003). The Tides of Change. Addressing Inequity and Chronic Disease in Atlantic Canada. A Discussion Paper. Halifax, Nova Scotia: Health Canada. Last accessed July 3, 2014 from www.phac-

aspc.gc.ca/canada/regions/atlantic/pdf/Tide
s_Inequity_and_Chronic_Disease.pdf

Health Canada (2001). Certain circumstances: issues in equity and responsiveness in access to health care in Canada; a collection of papers and reports prepared for Health Canada. Last accessed March 12, 2015 from http://www.hc-sc.gc.ca/hcs-sss/alt_formats/hpb-dgps/pdf/pubs/2001-certain-equit-acces/2001-certain-equit-acces-eng.pdf

Health Council of Cananda (2007). Why health care renewal matters: Learning from Canadians with Chronic Health Conditions. Toronto: Health Council. Last accessed March 8, 2015 from http://www.healthcouncilcanada.ca/tree/2.20-Outcomes2FINAL.pdf

Health Council of Canada (2011). Health Care Renewal In Canada: Progress Report 2011. p.13.

Health Officers Council of BC (2008). Health inequities in British Columbia, discussion paper. Last accessed July 3, 2014 from www.phabc.org/files/HOC_Inequities_Report.pdf

Hobfoll, S.E. & Schroder, K.E.E. (2001). Distinguishing between passive and active prosocial coping: bridging inner-city women's mental health and AIDS risk behaviour. *Journal of Social and Personal Relationships, 18*(2), pp. 201-217). Last accessed July 3, 2014 at spr.sagepub.com/content/18/2/201.short

Holohan, C.J. & Moos, R.H. (1987). Personal and contextual determinants of coping strategies. *Journal of Personality and Social Psychology, 52*, pp. 946-955.

Holton, E., Gogosis, E. & Hwang, S. (2010). Housing vulnerability and health: Canada's hidden emergency. Toronto: Research Alliance for Homelessness, Housing and Health. Last accessed March 12, 2015 from http://www.stmichaelshospital.com/pdf/crich/housing-vulnerability-and-health.pdf

Horney, J., & Marshall, I. (1991). Measuring lambda through self reports. *Criminology, 29*, 471-496.

House, J.S., Landis, K.R. & Umberson, D. (1988). Social relationships and health. *Science, 241*(4865), pp. 540-545. Last accessed July 3, 2014 from http://www.ncbi.nlm.nih.gov/pubmed/3399889

Howell, D. (2012). Treatment of missing data – Part 1. Last accessed January 3, 2015 from http://www.uvm.edu/~dhowell/StatPages/More_Stuff/Missing_Data/Missing.html

Hoxmark, E., Nivison, M. & Wynn, R. (2010). Predictors of mental distress among substance abusers receiving inpatient treatment. *Substance Abuse Treatment, Prevention, and Policy, 7*, 5-15.

Hubley, A.M., Russell, L.B., Palepu, A. & Hwang, S. (2014). Subjective quality of life among individuals who are homeless: a review of current knowledge. *Soc Indic Res, 115*, pp. 509-524.

Ilochi, P.I. (2011). Factors that impact access to quality food in the inner city, unpublished Master's thesis, University of Pittsburgh. Last accessed March 12, 2015 from http://d-scholarship.pitt.edu/6628/

Isaacson, J., Butler, R., Zacharek, M. & Tzelpis, A. (1994). Screening with the Alcohol Use Disorders Identification Test (AUDIT) on an inner-city population. *Journal of General Internal Medicine, 9*, pp. 550-3.

Kass-Bartelmes, B., & Bosco, L. (2002). Reducing costs and improving outcomes. Research in Action, 8. Last accessed March 12, 2015 from http://archive.ahrq.gov/research/findings/factsheets /pharmaceutical/rxtherapies/rxria.html

Katz, J., Chang, L., Sangha, O., Fossel, A. & Bates, D. (1996). Can comorbidity be measured by questionnaire rather than by medical record review? *Medical Care, 34*(1), pp. 73-84.

Keller, P.A. & Lehmann, D.R. (2008). Designing effective health communications: a meta-analysis. *American Marketing Association, 27*(2), pp. 117-130. Last accessed July 3, 3014 from healthcare.tuck.dartmouth.edu/images/uploads/Designing_Effective.pdf

Koegel, P., Burnam, M.A. & Farr, R.K. (1990). Subsistence adaptation among homeless adults in the inner city of Los Angeles. Journal of Social Issues, 46(4). Last accessed march 12, 2015 from http://onlinelibrary.wiley.com/doi/10.1111/j.1540-

4560.1990.tb01800.x/abstract;jsessionid=513E834421C6990B89222E5EF232A985.f01t03

Kosinski, M., Bjorner, J. & Raju, A. (2009). Evaluation of the validity of BDI scores estimated from the SF-36 mental health scale. Quality of Life Research, A-24.

Kroenke, K. (2002). Integrating psychological care into general medical practice. *British Medical Journal, 324*(7353), 1536.

Kroenke, K., Spitzer, R. & Williams, J. (2001). The PHQ-9: validity of a brief depression severity measure. *Journal of General Internal Medicine, 16*(9), pp. 606-13.

Kushel, M.B., Perry, S., Bangsberg, D., Clark, R. & Ross, A.R. (2002). Emergency Department use among the homeless and marginally housed: results from a community-based study. *Am J Public Health, 82*(5), pp. 778-784.

Kushel, M.B., Vittinghoff, E. & Haas, J.S. (2001), Factors associated with the health care utilization of homeless persons. *JAMA, 285*, pp. 200-6.

Law MR, Cheng L, Dhalla IA, et al. (2012) The effect of cost on adherence to prescription medications in Canada. *Canadian Medical Association Journal*, 184(3), pp. 297-302.

Levert, S. (2013). Sustainability of the Canadian health care system and impact of the 2014 revision to Canada Health Transfer. Last accessed July 3, 2014

from www.soa.org/files/research/projects/research-2013-can-healthcare.pdf

Lettner, M. (2008). Health equity now: a working paper on the best first steps for Ontario. Last accessed March 8, 2015 from http://www.wellesleyinstitute.com/wp-content/uploads/2011/11/HealthEquityNow.pdf.

Lezine, D.A, & Reed, G.A. (2007). Political will: a bridge between public health knowledge and action, Am J Public Health, 97(11). Last accessed March 10, 2015 from http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2040380/

Lightspeed Research (2008). Questionnaire length, proprietary information, pp1-2. Last accessed January 31, 2015 from http://www.lightspeedresearch.com/pdfs/Questionnaire _Length.pdf

Lincoln, Y.S. & Guba, E.G. (1985). *Naturalistic Inquiry*, pp. 347-9, Newbury Park, CA: Sage Publications Inc.

Lundberg, L., Johannesson, M., Isacson, D.G. & Borquist, L. (1999). The relationship between health-state utilities and the SF-12 in a general population. *Med Decis Making, 19*(2), pp. 128-140. Last accessed July 3, 2014 from www.ncbi.nlm.nih.gov/pubmed/10231075

Long, J. (1997). Regression Models for Categorical and Limited Dependent Variables. Thousand Oaks, CA: SAGE Publications, Inc.

Lungenhausen, M., Lange, S., Maier, C., Schaub, C., Trampisch et al. (2007). Randomized controlled comparison of the Health Survey Short Form (SF-

12) and the Graded Chronic Pain Scale (GCPS) in the telephone interviews versus self-administered questionnaires. Are the results equivalent? *BioMed Central, 7*(50), published online. Last accessed January 31, 2015 from http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2216025/.

Lynch, J. & Kaplan, G. (2000). Socioeconmic status. In L. F. Berkman and I. Kawachi (Eds.) *Social Epidemiology.* Oxford University Press: Oxford.

Mahler, H. (1981). The meaning of Health for All by the year 2000, World Health Forum, 2(1).

Malone, R.E. (1995). Heavy users of emergency services: social construction of a policy problem. *Social Science & Medicine, 40*(1), pp. 469-477.

McIntyre, L. & Tarasuk, V. (2002). Food security as a determinant of health. Paper presented at the Social Determinants of Health across the Lifespan Conference, Toronto.

Mental Health Commission of Canada (2014). Cross-site at home/chez soi project, national final report. Last accessed July 3, 2014 at http://www.mentalhealthcommission.ca/English/system/files/private/document/mhcc_at_home_report_national_cross-site_eng_2.pdf

Miles, M.B. & Huberman, A.M. (1994). *Qualitative Data Analysis: An Expanded Sourcebook*, Thousand Oaks, CA: Sage Publications Inc.

Munro, A., Reynolds, V. & Plamondon, R. (2013). Lessons from self-organising shelter communities: ‘we were already a community and you put a roof

over us. International Journal of Narrative Therapy & Community Work, 2. Last accessed March 13, 2015 from http://search.informit.com.au/documentSummary;dn=464708859194384;res=IELHEA

National Business Research Institute (NBRI; 2015). Survey incentives: response rates and data quality, white paper. Last accessed January 31, 2015 at https://www.nbrii.com/customer-survey-white-papers/survey-incentives-response-rates-and-data-quality/

Newport, F. (2003). Looking closely at survey response rates. *The Gallup Poll*. Last accessed March 8, 2015 from www.gallup.com/poll/7510/looking-closely-survey-response-rates.aspx.

Permuth-Levine, R. (2007). Differences in perceived stress, affect, anxiety, and coping ability among college students in physical education courses, dissertation, Department of Public and Community Health, University of Maryland. Last accessed July 3, 2014 at drum.lib.umd.edu/bitstream/1903/6811/1/umi-umd-4299.pdf

Public Health Agency of Canada (PHAC; 2007). The Core Competencies of Public Health Professionals, p.5.

QualityMetric (2013). Brief interpretation guideline for SF12v2® physical and mental component summary measure scores, prepared for Alberta Health Services January 29, 2013.

QualityMetric (2014). SF health surveys. Last accessed July 3, 2014 at www.qualitymetric.com/WhatWeDo/SFHealthSurveys/tabid/184/Default.aspx

Quan, H., Sundararajan, V., Halfon, P., Fong, A., Burnand, B. et al. (2005). Coding algorithms for defining comorbidities in ICD-9-CM and ICD-10 administrative data. *Med Care 43*(11), pp. 1130-1139. Last accessed July 3, 2014 from www.ncbi.nlm.nih.gov/pubmed/16224307

Raphael, D. (2003). Poverty makes me sick. Presentation at the Community Forum on Poverty and Health, Calgary, Alberta.

Rosen, D., Smith, M.L. & Reynolds, C.F. III (2008). The prevalence of mental and physical health disorders among older methadone patients. *The American Journal of Geriatric Psychiatry, 16*(6), pp. 488-497. Last accessed July 3, 2014 at www.sciencedirect.com/science/article/pii/S1064748112606198

Ross N, Gilmour H, Dasgupta K. (2010). 14-year diabetes incidence: The role of socio-economic status. *Health Reports*, 21(3), pp. 19-28.

Rosychuk, R.J., Voaklander, D.C., Klassen, T.P., Senthilselvan, A., Marrie, T.J. et al. (2010). A population-based study of emergency department presentations for asthma in regions of Alberta. *Canadian Journal of Emergency Medicine, 12*(4), pp. 339-46. Last accessed January 31, 2015 from http://www.cjem-online.ca/v12/n4/p339

Rugs, D., Hills, H., Moore, K. & Peters, R. (2011). A community planning process for the implementation of evidence-based practice. *Evaluation and Program Planning, 34*, 29-36.

Ryan, G.W. & Bernard, R. (2003). Techniques to identify themes, *Field Methods, 15*(1), p.93.

Saskatchewan Labour Relations Board (2009). Canadian Union of Public Employees, Local 4836, Applicant v. Lutheran Sunset Home of Saskatoon, c.o.b. as Luthercare Communities, Regina Lutheran Care Society Inc., and Broadway Terrace Inc., Respondents. Last accessed March 12, 2015 from http://www.sasklabourrelationsboard.com/pdfdoc/043-09

Schafer, M.H. (2013). Discussion networks, physician visits, and non-conventional medicine: probing the relational correlates of health care utilization. *Social Sciences & Medicine, 87*, pp. 176-184.

Schneider, B.S. & Schneider, U. (2009). Determinants of consequences of health behaviour: new evidence from German micro data. *Social Sciences Research Network*, SOEPpaper No. 253. Last accessed April 26, 2014 from papers.ssrn.com/sol3/papers.cfm?abstract_id=1526579

Seed, B. (2011). Food security in public health and other government programs in British Columbia, Canada: a policy analysis. Doctor of Philosophy in Food Policy, Centre for Food Policy in the School of Community and Health Sciences, City University, London, United Kingdom. Last accessed

April 26, 2014 from www.researchgate.net/publication/46450257_Determinants_and_Consequences_of_Health_Behaviour_New_Evidence_from_German_Micro_Data/file/79e4150eed6c1970da.pdf

Shareck, M., Frolich, K.L. & Poland, B. (2013). Reducing social inequities in health through settings-related interventions – a conceptual framework. *Global health promotion, 20*(2), pp. 39-52.

Silverstone, P.H. (1990). Depression increases mortality and morbidity in acute life-threatening medical illness. *Journal of Psychometric Research, 34*(6), pp. 651-657. Last accessed July 3, 2014 from www.sciencedirect.com/science/article/pii/002239999090109H

Skeem, J., Markos, P., Tiemann, J. & Manchak, S. (2006). "Project HOPE" for homeless individuals with co-occuring mental and substance abuse disorders: reducing symptoms, victimization, and violence. International *Journal of Forensic Mental Health, 5*(1), pp. 1-13.

Slomp, M., Bland, R., Patterson, S. & Whittaker, L. (2009) Three-year physician treated prevalence rate of mental disorders in Alberta. *Can J Psychiatry, 54*(3), pp. 199-203.

Smylie, J., Kaplan-Myrth, N., McShane, K. & Pikwakanagan First Nation (2008). Indigineous knowledge translation: baseline findings in a qualitative study of the pathways of health knowledge in three indigenous communities in Canada. *Health Promotion Practice*, published online. Last accessed July

3, 2014 from hpp.sagepub.com/content/early/2008/02/15/1524839907307993.short

St. Michael's (2015). Our partners. Last accessed March 7, 2015 from http://www.stmichaelshospital.com/partners/index.php

Statistics Canada (2009). Survey of Labour and Income Dynamics Custom Tabulation, Income Statistics Division. Last accessed April 21, 2014 from www.statcan.gc.ca/pub/75f0011x/2011001/serv-eng.htm

Statistics Canada (2014).Population by marital status and sex, by province and territory (Alberta, British Columbia, Yukon). Last accessed March 8, 2015 from www.statcan.gc.ca/tables-tableaux/sum-som/l01/cst01/famil01c-eng.htm

Stevenson, J., Brodaty, H., Boyce, P. & Bytg, K. (2012). Does age moderate the effect of personality disorder on coping style in psychiatric inpatients? *Journal of Psychiatric Practice, 18*(3), pp.187-98. Last accessed April 21 from www.ncbi.nlm.nih.gov/pubmed/22617083

Stewart, J.M. (2001). The impact of health status on the duration of unemployment spells and the implications for studies of the impact of unemployment on health status. Journal of Health Economics, 20(5), pp. 781-796. Last accessed July 3, 2014 from www.sciencedirect.com/science/article/pii/S016762960100087X

Suchman, L., & Jordan, B. (1990). Interactional troubles in face-to-face survey interviews. *Journal of the American Statistical Association, 85*, 232-241.

Thacker, S.B., Stroup, D.F., Carande-Kulis, V., Marks, J.S., Roy, K. & Gerberding, J.L. (2006). Measuring the public's health. *Public Health Rep, 121*(1), pp. 14-22.

The Alex (2015). Website. Last accessed March 13, 2015 from http://www.thealex.ca/

Thomson, H., Thomas, S., Sellstrom, E. & Petticrew, M. (2013). Housing improvements for health and associated soci-econmic outcomes. Cochrane Database Syst Rev, 28(2). Last accessed march 8, 2015 from http://www.ncbi.nlm.nih.gov/pubmed/23450585

Vaus, D.D. (2002). *Surveys in Social Research* (5 ed.), p.5. Last accessed January 31, 2015 from http://books.google.ca/books?hl=en&lr=&id=x6Vp5NO93CAC&oi=fnd&pg=PP2&dq=vaus+2002+qualitative&ots=YNvc929Kqv&sig=rrkb2k0tjQVtK4kMLg-OllwDmi4#v=onepage&q&f=false

Wagner E. (2000). The role of patient care teams in chronic disease management. *British Medical Journal*, 320, pp. 569-72.

Wang, J.L., Keown, L.A., Patten, S.B., Williams, J.A., Currie, S.R. et al. (2008). A population-based study on ways of dealing with daily stress: comparisons among individuals with mental disorders, with long-term general medical conditions and healthy people. *Soc Psychiatry Psychiatr Epidemiol, 44*, pp. 666-674. Last accessed July 3, 2014 from link.springer.com/article/10.1007/s00127-008-0482-2#page-1

Ware, J.E., Kosinski, M., Bjorner, J.B., Turner-Bowker, D.M., Gandek, B. & Maruish M.E. (2007). User's Manual for the SF-36v2 Health Survey. 2nd ed. Lincoln, RI: QualityMetric, Inc.

Ware, J.E. & Sherbourne, C.D. (1992). The MOS 36-item short-form health survey (SF-36); conceptual framework and item selection. *Med Care, 30*(6), pp. 473-483. Last accessed July 3, 2014 at www.ncbi.nlm.nih.gov/pubmed/1593914

Wasylenki, D.A. (2001). Inner city health, commentary. *Canadian Medical Association Journal, 164*(2), 214-5. Last accessed January 31, 2015 from www.cmaj.ca/cgi/reprint/164/2/214.

Watson, R., Stimpson, A., Hostick, T. (2004). Prison health care: a review of the literature. *Int J Nurs Stud, 41*(2), pp. 119-128. Last accessed July 3, 2014 at www.ncbi.nlm.nih.gov/pubmed/14725776

Wellesley Institute (2009). The 7% solution: Federal budget recommendations.

Wen, C.P., Cheng, T.Y., Tsai. M.K., et al. (2008). All-cause mortality attributable to chronic kidney disease: a prospective cohort study based on 462,293 adults in Taiwan. *Lancet, 371*(9631), pp. 2173-82.

Wild. T. C. (2006). Assessment of Risk Contexts: User Guide. Edmonton, Alberta: University of Alberta.

Wild, T. ., Prakash, M., O'Connor, H., Taylor, M., Edwards, J. et al. (2003). Injection drug use in Edmonton's inner city: a multimethod study. Technical Report released by Addiction and Mental Health Research

Laboratory: Centre for Health Promotion Studies and Department of Public Health Sciences, University of Alberta.

Wilkins, R., Tjepkema, M., Mustard, C. & Choiniere, R. (2008). The Canadian census mortality follow-up study, 1991 through 2001, Health Reports, 19(3), *Statistics Canada*, Catalogue no. 82-003-XPE. Last accessed July 3, 2014 from www.statcan.gc.ca/pub/82-003-x/2008003/article/10681-eng.pdf

Willms, D.G., Best, J.A., Taylor, W., Gilberta, J.R, Wilson, D.M. et al. (1990). A systematic approach for using qualitative methods in primary prevention research, *Medical Anthropology Quarterly*, 4(4), pp. 391-409. Last accessed January 31, 2015 from http://onlinelibrary.wiley.com/doi/10.1525/maq.1990.4.4.02a00020/abstract

World Health Organization (1986). Ottawa Charter for Health Promotion. Last accessed March 8, 2015 from http://www.phac-aspc.gc.ca/ph-sp/docs/charter-chartre/pdf/charter.pdf

World Health Organization (2003). Overview of the World Health Report 2003: Shaping the future, Geneva. Last accessed March 8, 2015 from http://www.who.int/whr/2003/en/overview_en.pdf

World Health Organization (WHO; 2011). Health topics; primary health care.

World Health Organization (2015). Health promotion. Last accessed March 8, 2015 from http://www.who.int/topics/health_promotion/en/

Zink, D.N., Withers, K., Dedmon, A., Hemandez, M., Jackman, T. et al. (2012). A novel collaborative practice model (CPM) for the treatment of mental illness of the indigent and uninsured), poster. University of North Carolina. Last accessed March 12, 2015 from http://antonioepuente.com/wp-content/uploads/2013/03/2012NCPA-Cape-Fear-Clinic-Poster-04.16.12.ppt

Appendix 1 – Project Budget

The Edmonton Inner City Health Research and Education Network provided $9183.75 in funding based on the initial budget below.

Table A1-1. Project budget

Royal Alexandra Hospital Foundation
Edmonton Inner-City Health Research and Education Network
Grant Competition, 2010-2011
Application for Grant Funding, Budget

Graduate Research Assistant Remuneration		**$4,540.00**
Details	**Estimated Hours**	**Cost (@$20/hr)**
Project Consultation and Design	40	$800.00
Patient Data Collection	72	$1,440.00
Stakeholder Data Collection	20	$400.00
Data Analysis	35	$700.00
Consultation for Data Interpretation	15	$300.00
Report Writing	35	$700.00
Knowledge Translation	10	$200.00
Project Course and Program Fees (related to completing research)		**3808.86**
10% Overhead for Materials		**834.89**
	Total	**$9,183.75**

The total estimated hours for this work was much more, and through the project the author realized that the required effort was significantly underestimated. Each interview took on average 45 minutes to complete, resulting in a total of just over 80 hours of interviewing slightly more than the initially estimated 72 hours. Further, as the interviews occurred over several days, travel time and costs associated with travel to and from the study site were not captured or reflected in the estimate; about 2-3 interviews were completed at each site visit. The major

effort during the past year (albeit part time and around a professional work schedule) was regarding data interpretation, many more hours than the estimated 15 were contributed by the author and committee members. Three full drafts of this thesis have been created to date over a period of just more than 2 years, with the most recent effort taking many hours to understand broader policy contexts and potential interventions to address key health needs; this time period accommodates for review and feedback completed by the author and the committee in and around usual professional, academic and personal pursuits; the original estimate of 35 hours for report writing was a gross underestimate for the purposes of a thesis and academic writing. Further, through the course of the study additional consultation with the committee members to design, carry out analysis, prepare and present results as a thesis defense, and subsequently finalize reporting; where these additional hours are not accounted for in the research design.

Appendix 2 – Information Letter, Consent Form and Survey Tool

Centre for Health Promotion Studies

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Health Promotion Needs Assessment for Inner City People
Information Sheet

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Note: If preferred, the information letter and survey may be read aloud by the interviewer to the participant.

The Royal Alexandra Hospital would like to improve services for people who live in the Edmonton inner city area. People who go to the Boyle McCauley Health Centre and Boyle Street Community Services will be asked to partake. In order to do this, local health service providers, Boyle McCauley and Boyle Street Community Services have to find out what people's needs are. This survey is being conducted in order to understand your health needs.

What will you have to do? I would like to ask you questions on a range of health topics relating to your recent experiences. It should take about 45 minutes. You are invited to participate in a one-on-one interview during which you will be asked questions about:

- Health status
- Health needs
- Health services
- Health concerns

Will it help? The benefit to answering these questions is that Alberta Health Services will better understand your health needs. The hospital, Boyle

Street Community Services and Boyle McCauley Health Centre may use this information to improve services.

Will it hurt? The healthcare you receive today will not be changed by your choice to answer these questions.

Can you quit? You don't have to answer any questions today if you don't want to. If you start answering questions but change your mind, we can stop at any time. No one will be mad at you if you decide you don't want to do this, or if you decide to stop part way through. You should tell me that you want to quit.

Who will know? Your answers will not be shared with your doctor or another health provider. Your answers will be kept private. No one will know that you completed the survey. No one will know which answers are yours. Your name—or other information that would let someone know who you are, and will not be included in the results. All completed surveys will be kept in a locked cabinet. The Royal Alexandra hospital, the Boyle McCauley Health Centre and Boyle Street Community Centre will use your answers to develop services to better meet your health needs. The research is partially supported through the Centre for Health Promotion Studies, University of Alberta, as it is completed by a graduate student. Funding to support this project has been received from the Edmonton Inner City Health Research and Education Network.

According to the research ethics requirements of the University of Alberta, the information you provide will be kept for at least five years after the study is done.

Your signature: We would like you to sign this form to show that you agree to take part.

Do you have questions or concerns? If you have any questions about this project, you may contact

Terry Fung
Student, Masters of Public Health Health Promotion
University of Alberta
780-720-9249

John Church
Associate Professor
Centre for Health Promotion Studies
University of Alberta
(780) 492-9054

If you have any concerns about your participation in this project, you may contact:

Health Research Ethics Board, Administration Office
University of Alberta
(780) 492-0459

Alberta Health Services is committed to quality improvement and takes patient concerns very seriously. How do you voice a concern? If you have a concern about services received, there are a number of ways that you can tell Alberta Health Services staff. Your options:

- You can **talk to your local health care provider** directly about the concern, or you can involve the program manager or supervisor to help reach a resolution
- You can contact the **Patient Relations Department**, by telephone 1-877-753-2170 and online https://www.albertahealthservices.ca/273.asp
- You can contact the Patient Concerns Officer by telephone 1-866-561-7578.

Alberta Ombudsman If you have a question about the fairness of how your concern was handled by Alberta Health Services, you may contact the Alberta Ombudsman Office at 780-427-2756 or visit www.ombudsman.ab.ca for more information.

Health Advice and Information If you require health advice or information, you may contact HEALTHLink Alberta anytime: 24 hours a day, seven days a week at 1-866-408-LINK(5465)

Do you have any questions before we begin? If you do have any questions as we go along, please feel free to stop me at any time to ask. I will do my best to answer your questions.

Centre for Health Promotion Studies

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Health Promotion Needs Assessment for Inner City People
Patient Consent Letter

Dear Terry Fung:

I know that you have asked me to partake in an interview. I know that you would like to learn more about the health needs of inner city people. I have read (or been read) the Information Letter that talks about the project. I have had a chance to ask questions about my role in the project. I have received answers to my questions. I am okay with these answers.

I know that I am agreeing to be interviewed for the project called *Health Promotion Needs Assessment for Inner City People.* I also know that this project will help shed light on my health needs.

I have been told that I can call you, Alberta Health Services Patient Concerns Office, the Alberta Ombudsman, or the University of Alberta Research Ethics Board. I also know that I can talk to staff here at the centre or call HEALTHLink Alberta should I want health information. I can share with these people any questions, concerns or complaints that I may have. I also know that I can stop at any time. My choice to speak with you will not change the services I receive today.

I also know of the steps that you will take to make sure no one knows that I spoke with you. You will keep all records in a locked cabinet. You will not use my name or other answers that would let someone else know who I am. You will only use an ID and not my name on my interview information. I also understand that you will destroy the interview records within five years of the final project work. I believe this is okay.

In general, I understand the letter that you have shared with me. I also agree to be interviewed.

Please circle "Yes" or "No" for each of the questions below.

1. Do you agree to allow us to use information offered in your interview without identifying who you are?	Yes	No
2. Do you agree to allow us to use direct quotations from your interview without identifying who you are?	Yes	No
3. Would you like to have your name appear on our list of expert sources when we publish our final report?	Yes	No

Initials: _____

Signed: _____

Date: _____

Fax to: _____

Participant ID: _____

Note: The information sheet must be attached to this consent form and a copy given to the participant.

Participant ID: _____

	Yes ▼	No ▼
Screening Question: In the past year, have you visited an Emergency Department?	□	□
Screening Question: Was this the Royal Alexandra Hospital Emergency Department?	□	□

About You
Contains questions from the ARC Questionnaire, Wild (2006)

1. How old are you? _____ years

2. What is your gender?

Male ▼	Female ▼	Transgender ▼
□	□	□

3. Which of these groups do you identify with?

White ▼	First Nations ▼	Métis ▼	Other ▼
□	□	□	□

If "Other," which groups? _____

4. In what languages can you conduct a conversation?

□ English	□ Hungarian	□ Spanish
□ French	□ Italian	□ Tagalog
□ Arabic	□ Persian	□ Ukrainian
□ Chinese	□ Polish	□ Vietnamese
□ Cree	□ Portuguese	
□ German	□ Punjabi	

Can you speak other languages? _____

5. What is the highest level of education that you have obtained?

Junior High	□ Less than junior high school □ Some junior high school □ Completed junior high school
High School	□ Some high school □ Completed high school
College	□ Some college □ Completed college
Undergraduate University	□ Some undergraduate university □ Completed undergraduate university
Graduate University	□ Some graduate university □ Completed graduate university

6. Are you in a relationship right now?

Yes	No
□	□

If "Yes," what type of relationship is it?

□ Single (never married, widowed, separated, divorced)
□ Legally married
□ Common-law/living as married
□ Same sex couple
□ No response
□ Other

	Yes ▼	No ▼	Don't Know ▼
7. Have you had any children?	□	□	□

If "Yes," how many? _____

	Yes ▼	No ▼
If "Yes," do you look after them?	□	□

If "Yes," what percentage of your time have you spent looking after your children in the past 30 days? ____ %

8. What is your current legal status? *Check all that apply.*

□ On parole
□ On probation
□ Serving a conditional or community sentence
□ Under bail, pending charges, or warrant
□ Fines
□ Other
□ Under no judicial restraint (*none of the above*)

9. How long have you lived in Edmonton? _____ years

If you have lived in places other than Edmonton, where did you live just before you came to Edmonton? _____

	Yes ▼	No ▼	Don't Know ▼
10. In the last year, did you leave Edmonton for 2 weeks or more?	□	□	□

	Check all that apply.	*If **checked**, how many days did you sleep here?*
11. Which of these places have you slept in the past 30 days?	□ Own apartment/house	_____ days
	□ Friend's place	_____ days
	□ Reserve or settlement	_____ days
	□ Hospital	_____ days
	□ Boarding house/hotel/ furnished room	_____ days
	□ Family member's place	_____ days
	□ Couch surfing	_____ days
	□ Street	_____ days
	□ Transition housing	_____ days
	□ Camps (squatting)	_____ days
	□ Detox	_____ days
	□ Don't sleep (walk all night)	_____ days
	□ Hostel/shelter	_____ days
	□ Working out of town (rigs/camp)	_____ days
	□ Jail/prison	_____ days
	□ Other: _____	_____ days

12. Do you live with anyone?
Check all that apply.

□ Alone
□ With family
□ With friends
□ With partner
□ With roommate(s)
□ With other residents (i.e., shelter)
□ With children
□ Other: _____

	Very unstable	A little unstable	Neither	A little stable	Very Stable
13. How would you describe your living situation?	□	□	□	□	□

	Very unsatisfied	A little unsatisfied	Neither	A little satisfied	Very satisfied
14. How satisfied are you with your living situation?	□	□	□	□	□

	Very difficult	Difficult	Neither	Easy	Very Easy
15. How easy would it be for you to change where you're living right now if you wanted to?	□	□	□	□	□

	Always	Sometimes	Never
16. Does your living situation change depending on the season?	□	□	□

17. Where does your mail usually go?

First 3 letters of postal code: _____

	Always	Sometimes	Never
Is this postal code different than your current residence?	□	□	□

	$0 -$99	$100 -$499	$500 -$999	$1000 -$1999	$2000 -$2999	$3000+
18. How much cash/money did you make in the past 30 days? *Includes legal and non-legal sources of income as well as assistance cheques*	□	□	□	□	□	□

	$0 -$99	$100 -$499	$500 -$999	$1000 -$1999	$2000 -$2999	$3000+
19. How much could you get for all of your stuff us you were to take it to the pawn shop <u>today</u>?	□	□	□	□	□	□

	Yes	No
20. In the last 30 days, have you been legally employed? *Does not include 'under the table' work.*	□	□

21. Which statement best describes your working circumstance?

Check only one box.

□ In paid work or self-employed, full time
□ In paid work or self-employed, part time (less than 30 hours per week
□ Intending to look but can't because of sickness or injury
□ Looking after the home or family full time
□ Retired
□ Unemployed or looking for work

	Yes, interested ▼	No, not interested ▼	Does not apply to me ▼
If you are unemployed or looking for work, would you be interested in having help finding a job?	□	□	□
If "Yes, interested," what kind of help would you like? ↳	_____		
If "Yes, interested," would you be interested in any kind of job training? If so, what kind of training?	_____		

	Mostly healthy ▼	Sometimes healthy ▼	Not healthy ▼	Not sure ▼
21. How would you describe your diet?	□	□	□	□

23. Where do you currently get your food?

Check all that apply.

□ Grocery stores
□ Convenience stores
□ Fast food restaurants
□ Dumpster diving
□ Other: _____

22. How often do you eat the following foods?

	Never ▼	Once a week ▼	2-6 times a week ▼	Once a day ▼	More than once a day ▼
a. Fruit (fresh, frozen or tinned)	□	□	□	□	□
b. Vegetables (fresh, frozen or tinned)	□	□	□	□	□
c. Bread, pasta, rice, potatoes (not chips)	□	□	□	□	□
d. Meat, chicken, fish	□	□	□	□	□
e. Fried food (including chips)	□	□	□	□	□
f. Convenience food (microwaveable)	□	□	□	□	□

24. What did you eat/drink yesterday?

Breakfast:	Mid-afternoon:
Mid-morning:	Supper:
Lunch:	Late evening:

Physical and Emotional Well-being
Contains questions from the ARC Questionnaire and the SF12v2

1. Please place an ***X*** somewhere on the line below to show **how healthy you feel right now**. *Healthy* refers to your overall physical and emotional well-being.

worst health imaginable _____ *best health imaginable*

2. Please place an ***X*** somewhere on the line below to show **how healthy you have felt in the last month**. *Healthy* refers to your overall physical and emotional well-being.

worst health imaginable _____ *best health imaginable*

	Excellent ▼	Very good ▼	Good ▼	Fair ▼	Poor ▼
3. In general, would you say your health is:	□	□	□	□	□

4. The following questions are about activities you might do during a typical day. Does <u>your health now limit you</u> in these activities? If so, how much?

	Yes, limited a lot ▼	Yes, limited a little ▼	No, not limited at all ▼
a. <u>Moderate activities</u>, such as moving a table, pushing a vacuum cleaner, or playing golf.	□	□	□
b. Climbing <u>several</u> flights of stairs.	□	□	□

5. During the <u>past 4 weeks</u>, how much of the time have you had any of the following problems with your work or other regular daily activities <u>as a result of your physical health</u>?

	All of the time ▼	Most of the time ▼	Some of the time ▼	A little of the time ▼	None of the time ▼
a. <u>Accomplished less</u> than you would like	□	□	□	□	□
b. Were limited in the <u>kind</u> of work or other activities	□	□	□	□	□

6. During the <u>past 4 weeks</u>, how much of the time have you had any of the following problems with your work or other regular daily activities <u>as a result of any emotional problems</u> (such as feeling depressed or anxious)?

	All of the time ▼	Most of the time ▼	Some of the time ▼	A little of the time ▼	None of the time ▼
a. <u>Accomplished less</u> than you would like	□	□	□	□	□
b. Did work or other activities <u>less carefully than usual</u>	□	□	□	□	□

	Not at all ▼	A little bit ▼	Moderately ▼	Quite a bit ▼	Extremely ▼
7. During the <u>past 4 weeks</u>, how much did <u>pain</u> interfere with your normal work (including both work outside the home and housework)?	□	□	□	□	□

8. These questions are about how you feel and how things have been with you during the past 4 weeks. For each question, please give one answer that comes closest to the way you have been feeling. How much of the time during the past 4 weeks…

	All of the time ▼	Most of the time ▼	Some of the time ▼	A little of the time ▼	None of the time ▼
a. Have you felt calm and peaceful?	□	□	□	□	□
b. Did you have a lot of energy?	□	□	□	□	□
c. Have you felt downhearted and depressed?	□	□	□	□	□

	All of the time ▼	Most of the time ▼	Some of the time ▼	A little of the time ▼	None of the time ▼
9. During the past 4 weeks, how much of the time has your physical health or emotional problems interfered with your social activities (like visiting with friends, relatives, etc.)?	□	□	□	□	□

10. How much of the time during the <u>past 4 weeks</u>…

	All of the time ▼	Most of the time ▼	Some of the time ▼	A little of the time ▼	None of the time ▼
a. Have you been very nervous?	□	□	□	□	□
b. Have you felt so down in the dumps that nothing could cheer you up?	□	□	□	□	□
c. Have you been happy?	□	□	□	□	□

Problematic Tobacco, Alcohol and Drug Use
Contains questions from the AUDIT, DUDIT

	Yes ▼	No ▼
1. Do you currently inject drugs?	□	□
If "Yes," is it easy for you to get to a needle exchange if you wanted to?	□	□
If "Yes," do you use a needle exchange?	□	□

	Never ▼	Once a month or less often ▼	2-4 times a month ▼	2-3 times a week ▼	4 times a week or more often ▼
2. How often do you use drugs other than alcohol? (See list of drugs on next pages.)	□	□	□	□	□

List of Drugs
(Note! Not alcohol!)

Cannabis	**Amphetamines**	**Cocaine**	**Opiates**
Marijuana	Methamphetamine	Crack	Smoked heroin
Hash	Phenmetraline	Freebase	Heroin
Hash oil	Khat	Coca	Opium
	Betel nut	Leaves	
	Ritaline (Methylphenidate)		

Hallucinogens	**Solvents/inhalants**	**GHB and others**
Ecstacy	Thinner	GHB
LSD (Lisergic acid)	Trichlorethylene	Anabolic steroids
Mescaline	Gasoline/petrol	Laughing gas (Halothane)
Peyote	Gas	Amyl nitrate (Poppers)
PCP, angel dust (Phencyclidine)	Solution	Anticholinergic compounds
Psilocybin	Glue	
DMT (Dimethyltryptamine)		

Pills - Medicines

Pills count as drugs when you take

- More of them or take them more often than the doctor has prescribed for you
- Pills because you want to have fun, feel good, get “high,” or wonder what sort of effect they have on you
- Pills that you have received from a relative or a friend
- Pills that you have bought on the “black market” or stolen

Sleeping Pills/Sedatives

Alprazolam	Glutethimide	Rohypnol
Amobarbital	Halcion	Secobarbital
Apodorm	Heminevrin	Sobril
Apozepam	Ikotorivil	Sonata
Aprobarbital	Imovane	Stesolid
Butabarbital	Mephobarbital	Stilnoct
Butalbital	Meprobamate	Talbutal
Chloral hydrate	Methaqualone	Temesta
Diazepam	Methohexital	Thiamyal
Dormicum	Mogadon	Thiopental
Ethcholorvynol	Nitrazepam	Triazolam
Fenemal	Oxascand	Xanor
Flunitrazepam	Pentobarbital	Zopiklon
Fluscand	Phenobarbital	

Painkillers

Actiq	Durogesic	OxyNorm
Coccilana-Etyfin	Fentanyl	Panocod
Citodon	Ketodur	Panocod forte
Citodon forte	Ketogan	Paraflex comp
Dexodon	Kodein	Somadril
Depolan	Maxidon	Spasmofen
Dexofen	Metadon	Subutex
Dilaudid	Morfin	Temgesic
Distalgesic	Nobligan	Tiparol
Dolcontin	Norflex	Tradolan
Doleron	Norgesic	Tramadul
Dolotard	Opidol	Treo comp
Doloxene	OxyContin	

Pills do NOT count as drugs if they have been prescribed by a doctor and you take them in the prescribed dosage.

	Never	Once a month or less often	2-4 times a month	2-3 times a week	4 times a week or more often
3. Do you use more than one type of drug on the same occasion?	□	□	□	□	□

	0	1-2	3-4	5-6	7 or more
4. How many times do you take drugs on a typical day when you use drugs?	□	□	□	□	□

	Never	Less often than once a month	Every month	Every week	Daily or almost every day
5. How often are you influenced heavily by drugs?	□	□	□	□	□
6. Over the past year, have you felt that your longing for drugs was so strong that you could not resist it?	□	□	□	□	□

	Never ▼	Less often than once a month ▼	Every month ▼	Every week ▼	Daily or almost every day ▼
7. Has it happened, over the past year, that you have not been able to stop taking drugs once you started?	□	□	□	□	□
8. How often over the past year have you taken drugs and then neglected to do something you should have done?	□	□	□	□	□

	Never ▼	Less often than once a month ▼	Every month ▼	Every week ▼	Daily or almost every day ▼
9. How often over the past year have you needed to take a drug in the morning after heavy drug use the day before?	□	□	□	□	□
10. How often over the past year have you had guilt feelings or a bad conscience because you used drugs?	□	□	□	□	□

	No ▼	Yes, but not over the past year ▼	Yes, over the past year ▼
11. Have you or anyone else been hurt (mentally or physically) because you used drugs?	□	□	□
12. Has a relative or a friend, a doctor or a nurse, or anyone else, been worried about your drug use or said that you should stop using drugs?	□	□	□

	Never ▼	Once a month or less often ▼	2-4 times a month ▼	2-3 times a week ▼	4 times a week or more often ▼
13. How often do you have a drink containing alcohol	□ *Skip to Question 21*	□	□	□	□

	1 or 2 ▼	3 or 4 ▼	5 or 6 ▼	7, 8 or 9 ▼	10 or more ▼
14. How many drinks containing alcohol do you have on a typical day when you are drinking?	□	□	□	□	□

	Never ▼	Less than monthly ▼	Monthly ▼	Weekly ▼	Daily or almost daily ▼
15. How often do you have six or more drinks on one occasion?	□	□	□	□	□
16. How often during the last year have you found that you were not able to stop drinking once you had started?	□	□	□	□	□

	Never ▼	Less than monthly ▼	Monthly ▼	Weekly ▼	Daily or almost daily ▼
17. How often during the last year have you failed to do what was normally expected from you because of drinking?	□	□	□	□	□
18. How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session?	□	□	□	□	□

	Never ▼	Less than monthly ▼	Monthly ▼	Weekly ▼	Daily or almost daily ▼
19. How often during the last year have you had a feeling of guilt or remorse after drinking?	□	□	□	□	□
20. How often during the last year have you been unable to remember what happened the night before because you had been drinking?	□	□	□	□	□

	No ▼	Yes, but not in the last year ▼	Yes, during the last year ▼
22. Have you or someone else been injured as a result of your drinking?	□	□	□
23. Has a relative or friend or doctor or another health worker been concerned about your drinking or suggested you cut down?	□	□	□

Coping

Contains questions from the Brief COPE Questionnaire

These items deal with the ways you've been coping with stress in your life. Different people deal with things in different ways, but I am interested in how you've tried to deal with stress. Each item says something different about a particular way of coping. I want to know to what extent you've been doing what the item says. How much or how frequently. Don't answer on the basis of whether it seems to be working or not—just whether or not you're doing it when things get stressful. Make your answers as true FOR YOU as you can.

WHEN I EXPERIENCE STRESS…	I haven't been doing this at all. ▼	I've been doing this a little bit. ▼	I've been doing this a medium amount. ▼	I've been doing this a lot. ▼
1. I've been turning to work or other activities to take my mind off things.	□	□	□	□
2. I've been concentrating my efforts on doing something about the situation I'm in.	□	□	□	□
3. I've been saying to myself "This isn't real."	□	□	□	□
4. I've been using alcohol or other drugs to make myself feel better.	□	□	□	□
5. I've been getting emotional support from others.	□	□	□	□
6. I've been giving up trying to deal with it.	□	□	□	□
7. I've been taking action to try to make the situation better.	□	□	□	□
8. I've been refusing to believe that this has happened.	□	□	□	□
9. I've been saying things to let my unpleasant feelings escape.	□	□	□	□
10. I've been getting help and advice from other people.	□	□	□	□
11. I've been using alcohol or other drugs to help me get through it.	□	□	□	□
12. I've been trying to see it in a different light, to make it seem more positive.	□	□	□	□

13. I've been criticizing myself.	□	□	□	□
14. I've been trying to come up with a strategy about what to do.	□	□	□	□
15. I've been getting comfort and understanding from someone.	□	□	□	□
16. I've been giving up the attempt to cope.	□	□	□	□
17. I've been looking for something good in what is happening.	□	□	□	□
18. I've been making jokes about it.	□	□	□	□
19. I've been doing something to think about it less, such as going to movies, watching TV, reading, daydreaming, sleeping, or shopping.	□	□	□	□
20. I've been accepting the reality of the fact that it has happened.	□	□	□	□
21. I've been expressing my negative feelings.	□	□	□	□
22. I've been trying to find comfort in my religion or spiritual beliefs.	□	□	□	□
23. I've been trying to get advice or help from other people about what to do.	□	□	□	□
24. I've been learning to live with it.	□	□	□	□
25. I've been thinking hard about what steps to take.	□	□	□	□
26. I've been blaming myself for things that happened.	□	□	□	□
27. I've been praying or meditating.	□	□	□	□
28. I've been making fun of the situation.	□	□	□	□

	Always ▼	Often ▼	Sometimes ▼	Rarely ▼	Never ▼
29. Are you ever stressed?	□	□	□	□	□
30. Are you ever depressed?	□	□	□	□	□

Health Conditions
Contains questions from the Charlson Comorbidity Questionnaire and PHQ-9

	Yes ▼	No ▼
1. Have you ever had a heart attack?	□	□
2. Have you ever been treated for heart failure? *You may have been short of breath and the doctor may have told you that you have fluid in your lungs or that your heart was not pumping well.*	□	□
3. Have you had an operation to unclog or bypass the arteries in your legs?	□	□
4. Have you had a stroke, cerebrovascular accident, blood clot or bleeding in the brain, or transient ischemic heart attack (TIA)?	□	□
5. Do you have difficulty moving an arm or leg as a result of the stroke or cerebrovascular accident?	□	□

	Yes ▼	No ▼
6. Do you have asthma?	□	□

	No ▼	Yes, only with flare-ups of my asthma ▼	Yes, I take medications regularly, even when I'm not having a flare up ▼
If "Yes," do you take medications for your asthma?	□	□	□

	Yes ▼	No ▼
7. Do you have emphysema, chronic bronchitis, or chronic obstructive lung disease?	□	□

	No ▼	Yes, only with flare-ups of my asthma ▼	Yes, I take medications regularly, even when I'm not having a flare up ▼
If "Yes," do you take medications for your lung disease?	□	□	□

	Yes ▼	No ▼
8. Do you have stomach ulcers, or peptic ulcer disease?	□	□

	Yes ▼	No ▼
If "Yes," has this condition been diagnosed by endoscopy (where a doctor looks into your stomach through a scope) or an upper GI or barium swallow study (where you swallow chalky dye and then x-rays are taken)?	□	□

	No ▼	Yes, treated by modifying my diet ▼	Yes, treated by medications taken by mouth ▼	Yes, treated by insulin injections ▼
9. Do you have diabetes (high blood sugar)?	□	□	□	□

	Yes ▼	No ▼
If "Yes," has the diabetes caused any of the following problems?		
a. Problems with your kidneys	□	□
b. Problems with your eyes, treated by an ophthalmologist	□	□

10. Have you ever had the following problems with your kidneys?
    - □ Poor kidney function (blood tests show high creatinine)
    - □ Have used hemodialysis or peritoneal dialysis
    - □ Have received kidney transplantation

	Yes ▼	No ▼
11. Do you have any of the following conditions?		
a. Rheumatoid arthritis	□	□
If "Yes," do you take medications for it regularly?	□	□
b. Lupus (systemic lupus erythematosus)	□	□
c. Polymalgia rheumatica	□	□
d. Alzheimer's Disease, or another form of dementia	□	□
e. Cirrhosis, or serious liver damage	□	□
f. Leukemia or polycythemia vera	□	□
g. Lymphoma	□	□
h. Cancer, other than skin cancer, leukemia or lymphoma?	□	□
If "Yes," has the cancer spread, or metastasized to other parts of your body?	□	□
i. AIDS (acquired immunodeficiency syndrome)	□	□
j. A serious head injury which required medical treatment	□	□
k. Tuberculosis (TB)	□	□

l. Other longstanding physical or mental illness, disability or infirmity. By *longstanding*, I mean anything that has troubled you over a period of time or that is likely to affect you over a period of time.	□	□

If "Yes," what is it? _____

12. Over the last 2 weeks, how often have you been bothered by any of the following problems?	Not at all ▼	Several days ▼	More than half the days ▼	Nearly every day ▼
a. Little interest or pleasure in doing things	□	□	□	□
b. Feeling down, depressed, or hopeless	□	□	□	□
c. Trouble falling/staying asleep, sleeping too much	□	□	□	□
d. Feeling tired or having little energy	□	□	□	□
e. Poor appetite or overeating	□	□	□	□
f. Feeling bad about yourself, or that you are a failure, or have let yourself or your family down	□	□	□	□
g. Trouble concentrating on things, such as reading the newspaper or watching TV	□	□	□	□
h. Moving or speaking so slowly that other people could have noticed. *Or the opposite:* being so fidgety or restless that you have been moving around more than usual	□	□	□	□
i. Thoughts that you would be better off dead or of hurting yourself in some way.	□	□	□	□

	Not difficult at all ▼	Somewhat difficult ▼	Very difficult ▼	Extremely difficult ▼
13. If you checked off any problem in question 12 so far, how difficult have these problems made it for you to do your work, take care of things at home, or get along with other people?	□	□	□	□

Use of Health Services

1. If you needed to access the following health services, how difficult do you think it would be?	I don't need access ▼	Not difficult at all ▼	Somewhat difficult ▼	Very difficult ▼	Extremely difficult ▼	How many times in the past 12 months have you used this service?
a. Emergency department	□	□	□	□	□	_____ times
b. Clinic for day-to-day health needs	□	□	□	□	□	_____ times
c. Hospital stay	□	□	□	□	□	_____ times
d. Clinic for day-to-day emotional well-being	□	□	□	□	□	_____ times
e. Dentist	□	□	□	□	□	_____ times
f. Psychiatric hospital	□	□	□	□	□	_____ times
g. Problematic drug use	□	□	□	□	□	_____ times
h. Problematic alcohol use	□	□	□	□	□	_____ times
i. Birth control	□	□	□	□	□	_____ times
j. Sexually transmitted infection (STI)	□	□	□	□	□	_____ times
k. **Female only:** PAP test	□	□	□	□	□	_____ times
l. Other: _____	□	□	□	□	□	_____ times

2. Please describe any problems you have had accessing health services. How could these problems be fixed?

_____

_____

3. How would you like to be given health information?
   - ☐ Magazines **Which ones?** _____
   - ☐ TV
   - ☐ Video
   - ☐ Newspapers **Which ones?** _____
   - ☐ Nurse
   - ☐ Doctor
   - ☐ Health centre **Which ones?** _____
   - ☐ Information sheets (1 page)
   - ☐ Pamphlet
   - ☐ Other, **please specify** _____
4. Thank you for your time today. The information that you have shared with me today will help me understand your health, your health needs, and the types of services that you need in order to be healthy. **Do you have any last comments or suggestions?**

_____

_____

_____

_____

Thank you again for your time. The information that you have shared with me today will be used to develop health services in Edmonton's inner city. It is our hope that by asking you these questions today that we will have a better sense of the health needs on our community and be more able to develop services to meet the needs of our community.

Appendix 3 – Components of Survey Tool for Assessed Variables/Characteristics

Measures	Survey questions	Values	Scales
Variable/characteristic: health status			
Visual Analogue Scale (VAS)	Please place an X somewhere on the line below to show how healthy you feel right now.	Worst health imaginable/Best health imaginable	00.0 cm-10.0cm
	Please place an X somewhere on the line below to show how healthy you have felt in the last month.	Worst health imaginable/Best health imaginable	00.0 cm-10.0cm
SF12v2® enhanced mental health version	In general, would you say your health is:	Excellent/Very good/Good/Fair/Poor	General Health Score (SF6D)/Physical Health Status (PCS)/Emotional Well-being (MCS)/Positive depression screen (score 2 standard deviations below average age-gender score); scores and comparisons for men/women of similar age and gender are provided by QualityMetric Inc.
	(The following questions are about activities you might do during…) Moderate activities, such as moving a table, pushing a vacuum cleaner, or playing golf.	Yes, limited a lot/Yes, limited a little/No, not limited at all	
	(The following questions are about activities you might do during…) Climbing several flights of stairs.	Yes, limited a lot/Yes, limited a little/No, not limited at all	

Measures	Survey questions	Values	Scales
	(During the past 4 weeks, how much of the time have… as a result of your physical health?) Accomplished less than you would like?	All of the time/Most of the time/Some of the time/A little of the time/None of the time	
	(During the past 4 weeks, how much of the time have… as a result of your physical health?) Were limited in the kind of work or other daily activities?	All of the time/Most of the time/Some of the time/A little of the time/None of the time	
	(During the past 4 weeks, how much of the time have… as a result of any emotional problems…?) Accomplished less than you would like?	All of the time/Most of the time/Some of the time/A little of the time/None of the time	
	(During the past 4 weeks, how much of the time have… as a result of any emotional problems…?) Did work or other activities less carefully than usual?	All of the time/Most of the time/Some of the time/A little of the time/None of the time	

Measures	Survey questions	Values	Scales
	During the past 4 weeks, how much did pain interfere…?	Not at all/A little bit/Moderately/Quite a bit/Extremely	
	…during the past 4 weeks… have you felt calm and peaceful?	All of the time/Most of the time/Some of the time/A little of the time/None of the time	
	…during the past 4 weeks… did you have a lot of energy?	All of the time/Most of the time/Some of the time/A little of the time/None of the time	
	…during the past 4 weeks… have you felt downhearted and depressed?	All of the time/Most of the time/Some of the time/A little of the time/None of the time	
	During the past 4 weeks… physical health or emotional problems interfered with your social activities…?	All of the time/Most of the time/Some of the time/A little of the time/None of the time	
	…during the past 4 weeks… have you been very nervous?	All of the time/Most of the time/Some of the time/A little of the time/None of the time	

Measures	Survey questions	Values	Scales
	…during the past 4 weeks… have you felt so down in the dumps…? …during the past 4 weeks… have you been happy?	All of the time/Most of the time/Some of the time/A little of the time/None of the time	
Variable/characteristic: depression			
PHQ9	(Over the last 2 weeks, how often have you been bothered by any of the following problems?) Little interest or pleasure in doing things.	Not at all/Several days/More than half the days/Nearly every day	Scores are calculated by summing the points awarded for each response *Not at all*=0 through to *Nearly every day*=3; where a total above 5 points is associated with a *mild major depressive disorder* through to *severe major depressive disorder*
	Feeling down, depressed or hopeless.	Not at all/Several days/More than half the days/Nearly every day	
	Trouble falling/staying asleep, sleeping too much.	Not at all/Several days/More than half the days/Nearly every day	
	Feeling tired or having little energy.	Not at all/Several days/More than half the days/Nearly every day	
	Poor appetite or overeating.	Not at all/Several days/More than half the days/Nearly every day	
	Feeling bad about yourself, or that you are a failure, or have let yourself or your family down.	Not at all/Several days/More than half the days/Nearly every day	

Measures	Survey questions	Values	Scales
	Trouble concentrating on things…	Not at all/Several days/More than half the days/Nearly every day	
	Moving or speaking so slowly… or being so fidgety…	Not at all/Several days/More than half the days/Nearly every day	
	Thoughts that you would be better off dead…	Not at all/Several days/More than half the days/Nearly every day	
	…how difficult have these problems made it for you…	Not difficult at all/Somewhat difficult/Very difficult/Extremely difficult	Functional impairment due to depressive symptoms is found for scores of 1 or greater, where points are awarded as *Not at all*=0 through to *Nearly every day*=3
Variable/characteristic: age and gender			
ARC Questionnaire	How old are you?	Years	
	What is your gender?	Male/Female/Transgender	
Variable/characteristic: cultural identity			
ARC Questionnaire	Which of these groups do you identify with?	White/First Nations/Other	
Self-report	If other, which groups?		
	In what languages can you conduct a conversation?	English/French/Arabic/Chinese/ Cree/German/Hungarian/Italian/ Persian/Polish/Portuguese/ Punjabi/Spanish/Tagalog/Ukrainian/ Vietnamese	

Measures	Survey questions	Values	Scales
Self-report	Can you speak another language?		
Variable/characteristic: education			
ARC Questionnaire	What is the highest level of education that you have obtained?	Some junior high/Completed junior high school/Some high school/Completed high school/Some college/Completed college/Some undergraduate university/Completed undergraduate university/Some graduate university/Completed graduate university	
Variable/characteristic: income level			
ARC Questionnaire	How much cash money did you make in the past 30 days?	$0-$99/$100-$499/$500-$999/$1000-$1999/$2000-$2999/$3000+	Using monthly income, annual income is estimated by multiplying the monthly income by twelve months. Using the Alberta 2009 cut-points, individuals who have an annual after-tax income less than $12,800 are considered to be below the low income cut-off (see Table 3-16 for more information)
	How much could you get for all your stuff if you were to take it to the pawn shop today?	$0-$99/$100-$499/$500-$999/$1000-$1999/$2000-$2999/$3000+	
Variable/characteristic: social supports (being in a relationship/living alone/having children)			
ARC Questionnaire	(Are you in a relationship right now?) What type of relationship is it?	Single (never married, widowed, separated, divorced)/Legally married/Common law or living as married/Same sex couple/No response/Other	

Measures	Survey questions	Values	Scales
	Have you had any children?	No/Yes (How many?)/Don't know/Refused	
	Do you look after them?	No/Yes/Don't know/Refused	
	What percentage of your time have you spent looking after…	Percentage	
	(Mark all that apply.) Do you live with anyone?	Alone/With family/With friends/With partner/With roommates/With residents i.e., in a shelter/With children/Other	
Variable/characteristic: legal status			
ARC Questionnaire	(Check all that apply.) What is your current legal status?	On parole/on probation/Serving a conditional or community sentence/Under bail, pending charges, or warrant/Fines/Other/Under no judicial restraint (none of the previous options apply)	
Variable/characteristic: employment status			
ARC Questionnaire	In the last 30 days, have you been legally employed?	No/Yes	
Self-report	(Check only one box) Which statement best describes your working circumstance?	In paid work or self-employed, full time/In paid work or self-employed, part time (less than 30 hours per week)/Intending to look for work but can't because of sickness or injury/Looking after the home or family full-time/Retired/Unemployed or looking for work	

Measures	Survey questions	Values	Scales
	If you are unemployed or looking for work, would you be interested in having help finding a job?	Yes, interested/No, not interested/Does not apply to me	
	If Yes, interested, what kind of help would you like?		
Variable/characteristic: quality of food consumed			
Canadian Community Health Survey	How would you describe your diet?	Mostly healthy/Sometimes healthy/Not healthy/Not sure	
Self-report	(Check all that apply.) Where do you currently get your food?	Grocery stores/Convenience stores/Fast food restaurants/Dumpster diving/Other	
Canadian Community Health Survey	How often do you eat the following foods? Fruit (fresh, frozen or tinned)/Vegetables (fresh, frozen or tinned)/Bread, pasta, rice, potatoes (not chips)/Convenience food (microwaveable)	Never/Once a week/2-6 times a week/Once a day/More than once a day	

Measures	Survey questions	Values	Scales
Self-report	What did you eat/drink yesterday? Breakfast/Mid-morning/Lunch/Mid-afternoon/Supper/Late evening		
Variable/characteristic: housing status			
ARC Questionnaire	How long have you lived in Edmonton?	Years	
	If you have lived in places other than Edmonton, where did you live just before you came to Edmonton?		
	In the last year, did you leave Edmonton for 2 weeks or more?	Yes/No/Don't know	
	(Check all that apply.) Which of these places have you slept in the past 30 days?	Own apartment or house/Boarding house, hotel or furnished room/Transition housing/Hostel or shelter/Friend's place/Family member's place/Camps (squatting)/Working out of town at rigs or camps/Reserve or settlement/Couch surfing/Detox/Jail or prison/Hospital/Street/Don't sleep or walk all night/Other; Days	

Measures	Survey questions	Values	Scales
	How would you describe your living situation?	Very unstable/Unstable/Neither/A little stable/Very stable	
	How satisfied are you with your living situation?	Very unsatisfied/Unsatisfied/Neither/Satisfied/Very satisfied	
	How easy would it be for you to change where you're living right now if you wanted to?	Very difficult/Difficult/Neither/Easy/Very easy	
	Does your living situation change depending on the season?	Always/Sometimes/Never	
	Where does your mail usually go?	First 3 letters of postal code	
	Is this postal code different than your current residence?	Always/Sometimes/Never	
Variable/characteristic: problematic alcohol use			
Alcohol Use Disorder Identification Test (AUDIT)	How often do you have a drink containing alcohol? (If never, skip remaining AUDIT questions.)	Never/Once a month or less often/2-4 times a month/2-3 times a week/4 times a week or more often	Scores above 8 are considered as possible problematic alcohol use
	How many drinks… do you have on a typical day…?	1 or 2/3 or 4/5 or 6/7, 8 or 9/10 or more	
	How often do you have six or more drinks…?	Never/Less than monthly/Monthly/Weekly/Daily or almost daily	

Measures	Survey questions	Values	Scales
	… not able to stop drinking once you had started?	Never/Less than monthly/Monthly/Weekly/Daily or almost daily	
	…failed to do what was normally expected from you…?	Never/Less than monthly/Monthly/Weekly/Daily or almost daily	
	…needed a first drink in the morning to get yourself going…?	Never/Less than monthly/Monthly/Weekly/Daily or almost daily	
	…had a feeling of guilt or remorse after drinking?	Never/Less than monthly/Monthly/Weekly/Daily or almost daily	
	…been unable to remember what happened the night before…?	Never/Less than monthly/Monthly/Weekly/Daily or almost daily	
	Have your or someone else been injured as a result of your drinking?	No/Yes, but not in the last year/Yes, during the last year	
	…concerned about your drinking or suggested you cut down?	No/Yes, but not in the last year/Yes, during the last year	
Variable/characteristic: problematic drug use			
Self-report	Do you currently inject drugs?	Yes/No	
	If yes, is it easy for your to get to a needle exchange if you wanted to?	Yes/No	

Measures	Survey questions	Values	Scales
	If yes, do you use a needle exchange?	Yes/No	
Drug Use Disorders Identification Test (DUDIT)	How often do you use drugs other than alcohol?	Never/Once a month or less often/2-4 times a month/2-3 times a week/4 times a week or more often	Males who score 6 points or more and females who score 2 points or more are considered as likely to have problematic drug use
	Do you use more than one type of drug on the same occasion?	Never/Once a month or less often/2-4 times a month/2-3 times a week/4 times a week or more often	
	How many times do you take drugs on a typical day when you use drugs?	0/1-2/3-4/5-6/7 or more	
	How often are you heavily influenced by drugs?	Never/Less often than once a month/Every month/Every week/Daily or almost every day	
	Over the past year, have you felt that your longing…?	Never/Less often than once a month/Every month/Every week/Daily or almost every day	
	…not been able to stop taking drugs once you started?	Never/Less often than once a month/Every month/Every week/Daily or almost every day	
	…then neglected to do something that you should have done?	Never/Less often than once a month/Every month/Every week/Daily or almost every day	
	…in the morning after heavy drug use the day before?	Never/Less often than once a month/Every month/Every week/Daily or almost every day	

Measures	Survey questions	Values	Scales
	…guilt feelings or a bad conscience because you used drugs?	Never/Less often than once a month/Every month/Every week/Daily or almost every day	
	Have your or anyone else been hurt… because you used drugs?	No/Yes, but not over the past year/Yes, over the past year	
	…worried about your drug use or said that you should stop…?	No/Yes, but not over the past year/Yes, over the past year	
Variable/characteristic: active and avoidant strategies to cope with life stressors			
Brief COPE	(When I experience stress…) …work or other activities to take my mind off things.	…not been doing this at all/…a little bit/…a medium amount/…a lot	Continuous variables for active coping strategies (items 1, 2, 5, 7, 9, 10, 12, 14, 15, 17, 18, 19, 20, 21, 22, 23, 24, 25, 27, 28) and avoidant coping strategies (3, 4, 6, 8, 11, 13, 16, 26) are created by summing the individual response scores (*not at all*=1 through to *a lot*=4)
	…doing something about the situation I'm in.	…not been doing this at all/…a little bit/…a medium amount/…a lot	
	…this isn't real.	…not been doing this at all/…a little bit/…a medium amount/…a lot	
	…using alcohol or other drugs to make myself feel better.	…not been doing this at all/…a little bit/…a medium amount/…a lot	
	…getting emotional support from others.	…not been doing this at all/…a little bit/…a medium amount/…a lot	
	…giving up trying to deal with it.	…not been doing this at all/…a little bit/…a medium amount/…a lot	

Measures	Survey questions	Values	Scales
	…taking action to try to make the situation better.	…not been doing this at all/…a little bit/…a medium amount/…a lot	
	… refusing to believe that this has happened	…not been doing this at all/…a little bit/…a medium amount/…a lot	
	…saying things to let my unpleasant feelings escape.	…not been doing this at all/…a little bit/…a medium amount/…a lot	
	…getting help and advice from other people.	…not been doing this at all/…a little bit/…a medium amount/…a lot	
	…using alcohol or other drugs to help me get through it.	…not been doing this at all/…a little bit/…a medium amount/…a lot	
	…make it seem more positive.	…not been doing this at all/…a little bit/…a medium amount/…a lot	
	…criticizing myself.	…not been doing this at all/…a little bit/…a medium amount/…a lot	
	…come up with a strategy about what to do.	…not been doing this at all/…a little bit/…a medium amount/…a lot	
	…comfort and understanding from someone.	…not been doing this at all/…a little bit/…a medium amount/…a lot	
	…giving up the attempt to cope.	…not been doing this at all/…a little bit/…a medium amount/…a lot	
	……something good in what is happening.	…not been doing this at all/…a little bit/…a medium amount/…a lot	
	…making jokes about it.	…not been doing this at all/…a little bit/…a medium amount/…a lot	

Measures	Survey questions	Values	Scales
	…doing something to think about it less…	…not been doing this at all/…a little bit/…a medium amount/…a lot	
	…accepting the reality of the fact that it has happened.	…not been doing this at all/…a little bit/…a medium amount/…a lot	
	…expressing my negative feelings.	…not been doing this at all/…a little bit/…a medium amount/…a lot	
	…trying to find comfort in my religion or spiritual beliefs.	…not been doing this at all/…a little bit/…a medium amount/…a lot	
	…help from other people about what to do.	…not been doing this at all/…a little bit/…a medium amount/…a lot	
	…learning to live with it.	…not been doing this at all/…a little bit/…a medium amount/…a lot	
	…what steps to take.	…not been doing this at all/…a little bit/…a medium amount/…a lot	
	…blaming myself for things that happened.	…not been doing this at all/…a little bit/…a medium amount/…a lot	
	…praying or meditating.	…not been doing this at all/…a little bit/…a medium amount/…a lot	
	…making fun of the situation.	…not been doing this at all/…a little bit/…a medium amount/…a lot	
	Are you ever stressed?	Always/Often/Sometimes/Rarely/Never	
	Are you ever depressed?	Always/Often/Sometimes/Rarely/Never	

Measures	Survey questions	Values	Scales
Variable/characteristic: 1-year mortality risk (chronic disease)			
Charlson Comorbidity Questionnaire	Have you ever had a heart attack?	Yes/No	Using the Charlson Scoring algorithm (Katz et al., 1996), a total score is calculated where *0 points* represents a *12% mortality rate*, *1-2 points a 26% mortality rate, 3-4 points, a 52% mortality rate, and 5+ points an 85% mortality rate*.
	Have you ever been treated for health failure?	Yes/No	
	Have you had an operation to unclog or bypass the arteries in your legs?	Yes/No	
	Have you had a stroke, cerebrovascular accident, blood clot…?	Yes/No	
	Do you have difficulty moving an arm or leg…?	Yes/No	
	Do you have asthma?	Yes/No	
	If yes, do you take medications for your asthma?	No/Yes, only with flare-ups of my asthma/Yes, I take medications regularly, even when I am not having a flare up	
	Do you have emphysema, chronic bronchitis, or chronic obstructive…?	Yes/No	
	If yes, do you take medications…?	No/Yes, only with flare-ups/Yes, I take medications regularly, even when I am not having a flare up	
	Do you have stomach ulcers, or peptic ulcer disease?	Yes/No	

Measures	Survey questions	Values	Scales
	If yes, has this condition been diagnosed by endoscopy…?	Yes/No	
	Do you have diabetes…?	No/Yes, modifying diet/Yes, medications/Yes, insulin	
	If yes… problems with your kidneys?	Yes/No	
	If yes… problems with your eyes…?	Yes/No	
	…poor kidney function…?		
	…used… dialysis?		
	…received kidney transplantation?		
	…rheumatoid arthritis?	Yes/No	
	If yes, do you take medications for rheumatoid arthritis?	Yes/No	
	…lupus…?	Yes/No	
	…polymyalgia rheumatic?	Yes/No	
	…Alzheimer's disease or another form of dementia?	Yes/No	
	…liver damage?	Yes/No	
	…leukemia or polycythemia vera?	Yes/No	
	…lymphoma?	Yes/No	
	…cancer other than skin cancer…?	Yes/No	

Measures	Survey questions	Values	Scales
	If yes cancer, had the cancer spread…?	Yes/No	
	…AIDS…?	Yes/No	
Self-report	…a serious head injury…?	Yes/No	
	Tuberculosis (TB)?	Yes/No	
	Other long-standing physical or mental illness…?	Yes/No	
	If yes other longstanding, what is it?		
Variable/characteristic: access to health services			
Self-report	(If you needed access to the following services, how difficult do you think it would be? How many times in the past 12 months have you used this service?) Emergency department	I don't need access/Not difficult at all/Somewhat difficult/Very difficult/Extremely difficult; times used	
	Clinic for day-to-day health needs	I don't need access/Not difficult at all/Somewhat difficult/Very difficult/Extremely difficult; times used	
	Hospital stay	I don't need access/Not difficult at all/Somewhat difficult/Very difficult/Extremely difficult; times used	
	Clinic for day-to-day emotional well-being	I don't need access/Not difficult at all/Somewhat difficult/Very difficult/Extremely difficult; times used	

Measures	Survey questions	Values	Scales
	Dentist	I don't need access/Not difficult at all/Somewhat difficult/Very difficult/Extremely difficult; times used	
	Psychiatric hospital	I don't need access/Not difficult at all/Somewhat difficult/Very difficult/Extremely difficult; times used	
	Problematic drug use	I don't need access/Not difficult at all/Somewhat difficult/Very difficult/Extremely difficult; times used	
	Problematic alcohol use	I don't need access/Not difficult at all/Somewhat difficult/Very difficult/Extremely difficult; times used	
	Birth control	I don't need access/Not difficult at all/Somewhat difficult/Very difficult/Extremely difficult; times used	
	Sexually transmitted infection (STI)	I don't need access/Not difficult at all/Somewhat difficult/Very difficult/Extremely difficult; times used	
	Female only: PAP test	I don't need access/Not difficult at all/Somewhat difficult/Very difficult/Extremely difficult; times used	
	Other	I don't need access/Not difficult at all/Somewhat difficult/Very difficult/Extremely difficult; times used	
	Please describe any problems you have had accessing health services. How could these problems be fixed?		
Variable/characteristic: access to health information			
Self-report	(How would you like to be given health information? Check all that apply)	Magazines; which ones?/TV/Video/ Newspapers; which ones?/Nurse/Doctor/ Health centre; which ones?/Information sheets (1 page)/Pamphlet/Other, please specify.	

Measures	Survey questions	Values	Scales
Variable/characteristic: last comments or suggestions			
Self-report	Do you have any last comments or suggestions?		