The Rural and Remote North: An Ecological Exploration of Mental-Health-Related Police Contacts in Northern British Columbia

by
Katherine Brine
B.A. (Hons.), Carleton University, 2013

Thesis Submitted in Partial Fulfillment of the Requirements for the Degree of Master of Arts

in the
School of Criminology
Faculty of Art and Social Sciences

© Katherine Brine 2015
SIMON FRASER UNIVERSITY
Fall 2015
Approval

Name: Katherine Brine
Degree: Master of Arts (Criminology)
Title: The Rural and Remote North: An Ecological Exploration of Mental-Health-Related Police Contacts in Northern British Columbia

Examining Committee: Chair: Dr. Sheri Fabian
Senior Lecturer
Dr. Simon Verdun-Jones
Senior Supervisor
Professor

Dr. Martin Andresen
Supervisor
Professor

Dr. Rick Parent
Supervisor
Associate Professor

Dr. Elliot Goldner
External Examiner
Professor
Faculty of Health Sciences
Simon Fraser University

Date Defended/Approved: December 11, 2015
Ethics Statement

The author, whose name appears on the title page of this work, has obtained, for the research described in this work, either:

a. human research ethics approval from the Simon Fraser University Office of Research Ethics,

or

b. advance approval of the animal care protocol from the University Animal Care Committee of Simon Fraser University;

or has conducted the research

c. as a co-investigator, collaborator or research assistant in a research project approved in advance,

or

d. as a member of a course approved in advance for minimal risk human research, by the Office of Research Ethics.

A copy of the approval letter has been filed at the Theses Office of the University Library at the time of submission of this thesis or project.

The original application for approval and letter of approval are filed with the relevant offices. Inquiries may be directed to those authorities.

Simon Fraser University Library
Burnaby, British Columbia, Canada

update Spring 2010
Abstract

Past literature demonstrates that the subset of the population with mental illness is at an increased risk of contact with law enforcement. For persons with mental illness residing in areas characterized by social disorganization, this risk is even greater. Nevertheless, much research neglects to address these relationships in the framework of rural northern environments. Using census and police data, this study sought to demonstrate a relationship between social disorganization and rates of Mental Health Act (MHA) calls in northern British Columbia. In an effort to explore a possible spatial association between mental-health-related police contacts and health care accessibility, distances between the location of MHA calls and the nearest health centre were also determined. Findings suggest that social disorganization theory may not generalize to rural environments, particularly for the explanation of mental health phenomena. Furthermore, long distances to health services may impact police response to mental health emergencies in these environments.

Keywords: mental health; policing; rural and northern communities; social disorganization theory; health service accessibility
To my parents, Lindsey and Cindy, and my brother Ian,
for your continuous love and support.
Acknowledgements

First and foremost I would like to extend my sincerest gratitude to my senior supervisor, Simon Verdun-Jones. I am truly inspired by the dedication you show to your students, and am forever grateful for your encouragement and continued support in spite of the many research obstacles I have faced during the past two years.

A very special thank you is also due to my committee member, Martin Andresen. Despite the great amount of stress associated with a drastic change in my thesis methodology, your time, guidance, and sense of humour has made this thesis not only possible, but also enjoyable.

I am also grateful to Rick Parent for being a member of my committee. Your policing expertise and suggestions were greatly valued. Thank you Elliot Goldner, my external examiner, for taking the time out of your busy schedule to attend my defence and provide me with insightful feedback.

Recognition is due to the Royal Canadian Mounted Police (RCMP) whose data was made available to me through their partnership with Simon Fraser University’s Institute for Canadian Urban Research Studies (ICURS). I would also like to thank ICURS directors Patricia and Paul Brantingham for providing me with access to this data, as well as ICURS members Adam Vaughan, and Katie Wuschke for answering many of my questions over the course of this process.

Many thanks to my fellow criminology colleagues, particularly those in my 'cohort', for your support and friendship throughout this process. Special recognition goes to Danielle Lappage who has become a true friend over the last two years. From late nights in the lab, laughter, tears, and a lot of sushi, we have created many memories that I will never forget. Thank you for always being there to lend an ear and put a smile on my face.

In addition, I owe a heartfelt thank you to my parents who were always a phone call away to continuously encourage me when times got tough. You have both inspired me to be the best that I can be. I would also like to thank my brother for his support, and most importantly, for tolerating my frequent requests for pictures and videos of my dog when times were especially stressful.
Last but not least, I would like to thank Kyle Sutherland. I cannot even begin to express how much your loyalty and support has meant to me over the past two years. It’s been a one hell of a ride, but without fail you have always been there to encourage me, laugh with me, and wipe away my tears. I am forever grateful for the amazing memories we have made and I look forward to the many adventures to come in the post-grad school chapter of our lives.
The greater the obstacle, the more glory in overcoming it.

— Molière
# Table of Contents

Approval............................................................................................................................. ii
Ethics Statement............................................................................................................... iii
Abstract............................................................................................................................. iv
Dedication ......................................................................................................................... v
Acknowledgements ........................................................................................................... vi
Quotation......................................................................................................................... viii
Table of Contents .............................................................................................................. ix
List of Tables ..................................................................................................................... xi
List of Figures ................................................................................................................... xi
List of Acronyms ............................................................................................................... xii

## Chapter 1. Introduction ............................................................................................... 1
  1.1. Persons with Mental Illness ...................................................................................... 2
      1.1.1. Prevalence and Nature of Police Interactions with SAMI ............................ 3
      1.1.2. Best Practices for Diversion ........................................................................ 5
      1.1.3. Risk Factors of the Population .................................................................... 6
  1.2. Social Ecology of Mental Disorder ........................................................................... 8
      1.2.1. Social Disorganization Theory .................................................................... 8
      1.2.2. Community Structure and Mental Illness .................................................... 9
      1.2.3. Community Structure and Risk for Police Contact .................................... 11

## Chapter 2. Rural and Remote Northern Communities ........................................... 13
  2.1. Police Roles: Urban vs. Rural Settings .................................................................. 13
      2.1.1. Additional Considerations ......................................................................... 15
  2.2. Response to Mental-Health-Related Emergencies ................................................ 17
      2.2.1. Access to Services .................................................................................... 17
      2.2.2. Homelessness .......................................................................................... 18
      2.2.3. Collaboration with Health Professionals .................................................... 19
      2.2.4. Police Training .......................................................................................... 21

## Chapter 3. Data and Methods ................................................................................... 25
  3.1. The Present Study ................................................................................................. 25
  3.2. Background: Northern British Columbia ............................................................... 26
  3.3. Data Sources ......................................................................................................... 31
      3.3.1. Police Data ................................................................................................ 31
            Mental Health Act Legislation ........................................................................ 31
      3.3.2. Census Data ............................................................................................. 33
      3.3.3. Hospital and Health Service Locations ..................................................... 34
  3.4. Analysis .................................................................................................................. 34

## Chapter 4. MHA Calls and Community Context .................................................... 38
  4.1. Regression Results ............................................................................................... 38
  4.2. Discussion .............................................................................................................. 40
4.2.1. Ethnic Heterogeneity ................................................................. 41
   Immigrant and Visible Minority Populations ............................. 41
   Aboriginal Population .............................................................. 43
4.2.2. Population and Population Turnover ..................................... 45
4.2.3. Socioeconomic Deprivation .................................................. 46
4.3. Considerations ........................................................................... 48
   4.3.1. Limitations of Ecological Data ............................................. 48
   4.3.2. Police Data ........................................................................ 48
   4.3.3. Rural Social Disorganization .............................................. 49

Chapter 5. Health Service Accessibility ............................................. 52
5.1. Distance to Health Care Services .............................................. 52
5.2. Local Indicators of Spatial Association ....................................... 56
5.3. Discussion ................................................................................ 59
   5.3.1. How Far is Too Far? .......................................................... 59
   5.3.2. Distance Decay ............................................................... 63
   5.3.3. MHA Hot Spots ............................................................... 64
5.4. Considerations ........................................................................... 65
   5.4.1. Limitations ....................................................................... 65

Chapter 6. Conclusions .................................................................... 67
6.1. Policy Recommendations .......................................................... 67
   6.1.1. MHA Provisions ............................................................... 68
   6.1.2. Telehealth for Mental Health .............................................. 68
       Police Transport ........................................................................ 69
       Mental Health Nurses: Expanded Practice ............................... 69
       Community Access and Specialized Care ................................. 70
       Existing Initiatives ................................................................... 70
   6.1.3. Interagency Cooperation ................................................... 72
   6.1.4. Policing Strategies ............................................................ 73
       First Nations Policing Program ............................................... 73
       Specialized Police Training .................................................... 74
6.2. Future Directions ....................................................................... 74
6.3. Final Remarks ........................................................................... 75

References ....................................................................................... 76
List of Tables

Table 3.1  Northern British Columbia Demographic Information ........................................ 28
Table 3.2  Climate Information for Major Centres in Northern British Columbia ........... 28
Table 3.3  Social Disorganization Characteristics .......................................................... 33
Table 4.1 Original and Final Models: Negative binomial regression results for MHA calls in northern British Columbia, 2002-2006 ........................................ 40
Table 5.1  Descriptive statistics for distance of MHA calls to the nearest health service ................................................................................................................. 56
Table 5.2  Designated facility catchment areas: Distances and MHA call counts ......... 56
Table 5.3  LISA Clusters ................................................................................................. 59

List of Figures

Figure 3.1  British Columbia, North Region .................................................................... 29
Figure 3.2  Northern British Columbia, Dissemination Area Populations, 2006 .......... 30
Figure 5.1  Spatial Distribution of RCMP Mental Health Act Calls, Northern British Columbia .................................................................................................................... 53
Figure 5.2  Health Service Locations, Northern British Columbia ........................... 54
Figure 5.3  Mental Health Act Calls and Designated Facilities, Northern British Columbia .................................................................................................................. 55
Figure 5.4  LISA Classifications by Major Centre, Northern British Columbia ....... 58
# List of Acronyms

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Full Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>BC</td>
<td>British Columbia</td>
</tr>
<tr>
<td>BCMH</td>
<td>British Columbia Ministry of Health</td>
</tr>
<tr>
<td>BCPHO</td>
<td>British Columbia Provincial Health Officer</td>
</tr>
<tr>
<td>CAD</td>
<td>Computer Aided Dispatch</td>
</tr>
<tr>
<td>CIT</td>
<td>Crisis Intervention Team</td>
</tr>
<tr>
<td>CJS</td>
<td>Criminal Justice System</td>
</tr>
<tr>
<td>CMHA</td>
<td>Canadian Mental Health Association</td>
</tr>
<tr>
<td>EDP</td>
<td>Emotionally Disturbed Person</td>
</tr>
<tr>
<td>FASD</td>
<td>Fetal Alcohol Spectrum Disorder</td>
</tr>
<tr>
<td>FNCPS</td>
<td>First Nations Community Policing Service</td>
</tr>
<tr>
<td>FNPP</td>
<td>First Nations Policing Program</td>
</tr>
<tr>
<td>GIS</td>
<td>Geographic Information System</td>
</tr>
<tr>
<td>ICURS</td>
<td>Institute for Canadian Urban Research Studies</td>
</tr>
<tr>
<td>IRER</td>
<td>Immigrants, Refugees, Ethnocultural, and Racialized</td>
</tr>
<tr>
<td>MHA</td>
<td>Mental Health Act</td>
</tr>
<tr>
<td>MHEC-RAP</td>
<td>Mental Health Emergency Care - Rural Access Program</td>
</tr>
<tr>
<td>NPOP-C</td>
<td>Northern Psychiatric Outreach Program</td>
</tr>
<tr>
<td>OMHAKEN</td>
<td>Ontario Mental Health and Addictions Knowledge Exchange Network</td>
</tr>
<tr>
<td>PHAC</td>
<td>Public Health Agency of Canada</td>
</tr>
<tr>
<td>PHSA</td>
<td>Provincial Health Services Authority</td>
</tr>
<tr>
<td>PIRS-BC</td>
<td>Police Information Retrieval System- British Columbia</td>
</tr>
<tr>
<td>PSP</td>
<td>Police Department, Social Services, and Psychiatry</td>
</tr>
<tr>
<td>RCMP</td>
<td>Royal Canadian Mounted Police</td>
</tr>
<tr>
<td>SAMI</td>
<td>Severe Addictions and/or Mental Illness</td>
</tr>
<tr>
<td>TEMPO</td>
<td>Training and Education about Mental Illness for Police Organizations</td>
</tr>
<tr>
<td>VPD</td>
<td>Vancouver Police Department</td>
</tr>
</tbody>
</table>
Chapter 1. Introduction

An accumulation of contemporary research has investigated police interactions with individuals who have mental health issues (e.g. Borum, Deane, Steadman, & Morrissey, 1998; Brink, Livingston, Desmarais, Greaves, Maxwell, Michalak, Parent, Verdun-Jones, & Weaver, 2011; Herrington, 2012). Past literature consistently demonstrates that a subset of the population with mental illness is at an increased risk of contact with law enforcement (e.g. Brink et al. 2011; Crocker, Hartford, & Heslop, 2009; Hoch, Hartford, Heslop, & Stitt, 2009) and repetitive encounters with the police are a common occurrence (Crocker, et al., 2009; Reuland, Schwarzfeld, & Draper, 2009). For persons with mental illness residing in areas characterized by social disorganization, the risk of police contact is even greater (Hiday, 2006; Silver, 2006).

It is noteworthy, however, that the majority of mental health and policing research, particularly from an ecological perspective, primarily focuses on these interactions in the context of urban settings (Hiday, 2006; Melnychuk, Verdun-Jones, & Brink, 2009; Payne, Berg, & Sun, 2005; Silver, Mulvey, & Swanson, 2002). While important, the literature neglects to address police interactions with this population in alternatively developed environments; specifically in rural or remote northern communities. These geographic regions face a unique array of challenges with regard to mental health and police services, and as first responders to incidents involving individuals with mental health issues (Borum et al., 1998; Cotton, 2004), police residing in rural and northern communities are repeatedly required to adopt additional responsibilities that they may not be adequately trained to deal with.

Owing to the unique considerations in northern and rural regions (e.g. isolation, limited service accessibility) (Herrington, 2012; Kirby & Keon, 2006) there is an evident need to explore the intersection of policing and mental health in the context of these environments. This study aims to address the gap in the literature pertaining to rural
policing and mental health issues with special consideration given to environmental characteristics; specifically, community social disorganization and health service availability. By enhancing the limited knowledge base in this area, this research will hopefully provide useful guidance for future policing practices and highlight the importance of health resources for effective police response to mental-health-related emergencies in these environments.

In the first section of this thesis, I provide a detailed review of the existing literature outlining the prevalence and nature of police encounters with persons with mental illness. Further, I discuss the social ecology of mental disorder through the theoretical lens of social disorganization theory; particularly, the association between community characteristics and risk for police contact among persons with mental illness. In the second chapter, I thoroughly examine the impact that existing obstacles in rural and northern environments have on police response to mental-health-related emergencies.

1.1. Persons with Mental Illness

Various terms are employed throughout the literature in reference to individuals experiencing a mental-health-related crisis. These include, but are not limited to: emotionally disturbed persons (EDPs) (Chappell, 2010), people in crisis (Iacobucci, 2014), mentally ill (Cotton, 2004), mentally disordered citizens (Engel & Silver, 2001), persons/people with mental illness (Cotton & Coleman, 2010; Durbin, Lin, & Zaslavaska, 2010) and adults who have “severe addictions and/or mental illness” (SAMI) (Patterson, Somers, McIntosh, Shiell, & Frankish, 2008). For the purposes of this study, “SAMI” refers only to a subset of persons with mental illness, as this term best reflects one of many challenges faced by police officers.

In the context of police encounters, a SAMI individual is defined as “a member of the public whose behaviour brings them into contact with police either because of an apparent need for urgent care within the mental health system, or because they are otherwise experiencing a mental or emotional crisis involving behaviour that is sufficiently erratic, threatening or dangerous that the police are called in order to protect the person or those around them” (Iacobucci, 2014, p. 4).
1.1.1. Prevalence and Nature of Police Interactions with SAMI

Since the mid-1950s, it has been argued that deinstitutionalization (the shift of persons with mental illness from institutions to the community) has considerably increased the prevalence of persons with mental illness diverted into the criminal justice system and coming into contact with police (Gur, 2010). Notably, however, the true impact of deinstitutionalization on mental-health-related police contacts is under debate within the literature.

In a comprehensive review of several studies, Brink and colleagues (2011) established that approximately five percent of police dispatches or encounters involve SAMI; although the prevalence of these interactions has been found to range from one percent to as high as 31% (Brink et al., 2011). For example, research conducted in a mid-sized Canadian city, examining rates and patterns of police encounters among individuals with and without mental illness, found that 3% of police interactions involve SAMI (Crocker, et al., 2009).

In contrast, a 2007 Vancouver Police Department (VPD) survey found that of 1,154 dispatch calls, 31% involved a person with mental illness (Wilson-Bates, 2008). Originally, this study utilized a Computer Aided Dispatch (CAD) system to collect data pertaining to mental health calls; however, this method proved to be inaccurate and unreliable. Instead, cards were distributed to a number of VPD officers and calls were classified as mental-health-related by members at the time of response. Evidently, police subjectivity is a limitation of this research design. It is also noteworthy that prevalence rates may include multiple contacts with the same individual, as repetitive encounters are a common finding throughout the literature (e.g. Crocker, et al., 2009; Reuland, et al., 2009).

The high volume of police contact with SAMI is conducive to extreme variation in the nature of these encounters. Cotton and Coleman (2010) outline the general nature of police interactions with SAMI in a Canadian context. The extent of these formal and informal interactions include: apprehensions under the Mental Health Act (MHA), arrests and disturbances in which the person turns out to be mentally ill, disturbances in which an individual appears to be mentally ill, situations in which a SAMI is the victim of a crime, and social support and informal contacts by police (p. 303).
The extremely diverse nature of police encounters with SAMI is further demonstrated in findings from a British Columbia (BC) study relating to how people with mental illness perceive and interact with the police (Brink et al., 2011). While the most common type of interaction was being transported by police to hospital or jail (90%), reasons for police contact also included: mental health crises, intoxication, being served with a warrant, request for assistance (to report a crime, as a witness to a crime, or as a victim of a crime), commission of a violent or non-violent criminal offence, and public disturbance (Brink et al., 2011).

Evidently, police interactions with SAMI can be both formal and informal in nature. Moreover, through these encounters, police have the discretion to choose between both formal and informal means of resolving the situation (Wells & Schafer, 2006). Informal resolutions include leaving the individual at the scene, in the care of another person (e.g. family member), or recommending treatment options/available services (Ritter, Teller, Marcussen, Munetz, & Teasdale, 2011; Teplin, 1986, as cited in Lurigio, Smith, & Harris, 2008; Wells & Schafer, 2006). Conversely, formal police interventions may include diversion into the mental health or criminal justice system through means of apprehension under the Mental Health Act, or arrest (Wells & Schafer, 2006).

Section 28 of the British Columbia Mental Health Act involves the apprehension by police of individuals (based on personal observations or information received), who are acting in a manner likely to endanger themselves or others and who exhibit apparent signs of mental disorder. According to section one, a ‘person with a mental disorder’ is someone “who has a disorder of the mind that requires treatment and seriously impairs the person’s ability: (a) to react appropriately to the person’s environment, or (b) to associate with others” (Mental Health Act [MHA], 1996). Generally, following apprehension, the police bring the individual to a physician for examination; usually in the Emergency Department of the local hospital. Notably, however, not all hospitals are ‘designated facilities’ for the purpose of civil commitment, and in less populated regions, the nearest designated facility may be far away.

Specifically, s. 28 states:
(1) A police officer or constable may apprehend and immediately take a person to a physician for examination if satisfied from personal observations, or information received, that the person
(a) is acting in a manner likely to endanger that person's own safety or the safety of others, and
(b) is apparently a person with a mental disorder.

(2) A person apprehended under subsection (1) must be released if a physician does not complete a medical certificate in accordance with section 22 (3) and (4).

Mental Health Act apprehensions vary greatly in terms of individual characteristics and outcomes. Through their investigation of patients brought to the ER by police under MHA provisions in Victoria, Australia, Al-Khafaji, Loy, and Kelly (2014), established that the most common reason for apprehension is a threat of harm to one’s self (65%). Of the 197 presentations analyzed in the study, the most common diagnosis following assessment was self-harm ideation or intent; the second being drug or alcohol effect. With regard to apprehension outcome, 67% were discharged to home, 13% resulted in voluntary psychiatric admission, and 13% in involuntary psychiatric admission (Al-Khafaji, et al., 2014).

In the context of mental health emergencies, recent research in British Columbia states that 17% of people with SAMI are apprehended or detained under the MHA and 15% are taken to hospital for psychiatric treatment (Brink et al., 2011). In 2007, an Ontario Police Services survey documented 40,000 SAMI/police contacts; over 16,000 of which were MHA apprehensions (40%) (Durbin et al., 2010). Arrest or apprehension of SAMI momentarily protects the public and the SAMI, best serving the needs of both the individual and society. However, the long-term consequences of quick release and a lack of adequate treatment contribute to the revolving door phenomenon whereby individuals cycle in and out of the criminal justice system (Durbin et al., 2010; Gur, 2010).

1.1.2. Best Practices for Diversion

Munetez and Griffin (2006) present a “conceptual framework” outlining the sequence in which individuals with mental illness progress through the criminal justice system (CJS). With the intention of reducing the criminalization of SAMI persons, the
Sequential Intercept Model identifies multiple points at which an intervention can be made in order to prevent entrance to, or further advancement through the CJS. According to this model, the ‘ultimate intercept’ and “most effective means of preventing the criminalization of people will mental illness” is an accessible and comprehensive mental health system that consists of integrated treatment and an effective base of services (Munetez & Griffin, 2006, p.545).

In the event that ‘best clinical practices’ do not sufficiently prevent a SAMI individual from entering the CJS, it is important to delineate the various points of interception at which an individual may alternatively be diverted to community treatment options (Munetez & Griffin, 2006). Sequentially, the points of interception are: 1) law enforcement and emergency services 2) post-arrest: initial detention and initial hearings 3) post-initial hearings: jail, courts, forensic evaluations, and forensic commitments 4) re-entry from jails, state prisons, and forensic hospitalization 5) community corrections and community support (p. 545).

In a general context, best practices for diversion include: inter-agency collaboration, service integration, mental disorder screening and early identification, standardized training, and enhanced community resources (Livingston, Weaver, Hall, & Verdun-Jones, 2008, p. 8). However, the Sequential Intercept Model highlights that law enforcement is often the first point of contact for SAMI individuals (Livingston, et al., 2008; Munetez & Griffin, 2006). Evidently, as first responders to incidents involving individuals with mental health issues (Borum et al., 1998; Cotton, 2004), police play a crucial role in diversion practices. Of the numerous police-based diversion models, the Crisis Intervention Team (CIT) has been proven to have the “lowest arrest rate, high utilization by patrol officers, rapid response time, and frequent referrals for treatment” (Munetez & Griffin, 2006, p.546). Police-based training and diversion programs will be discussed further in Chapter Two.

1.1.3. Risk Factors of the Population

Although diversion techniques are essential in reducing the criminalization of SAMI individuals, it is also important to consider the numerous risk factors that contribute to the
high prevalence of police contact among this population. Individuals with mental health issues are at an increased risk for violence when compared to those without substance abuse or mental disorders, and when substance use is considered, this risk considerably increases (Van Dorn, Volavka, & Johnson, 2012). Additional research is consistent with this notion, indicating that recent substance use by individuals with severe mental disorder, in combination with medication non-compliance, is associated with an increased likelihood of police contact (Borum, Swanson, Schwartz, & Hiday, 1997).

Various additional complex risk factors further contribute to the high prevalence of police contact with persons with mental illness. Simultaneous to the deinstitutionalization movement, there was also a substantial increase in the homeless population (Cotton & Coleman, 2010). Homelessness means that an individual does not have “stable, permanent, or appropriate housing” (Canadian Observatory on Homelessness, 2012). Frequently, individuals in this situation are forced to live in public spaces where they are more likely to come into contact with police. It is well documented that severely mentally ill individuals are more affected by homelessness (Canadian Mental Health Association [CMHA], 2014). This may be attributable to employment barriers, unstable living environments, and health issues (CMHA, 2014). It is estimated that in British Columbia, specifically, 60 to 100% of the homeless population have addiction issues and/or mental illness (Canadian Alliance on Mental Illness and Mental Heath, 2012). This high prevalence of persons with mental illness within the homeless population may also partially account for the rising number of police encounters with these individuals. Arguably, since the deinstitutionalization movement, the necessary community mental health services are still not in place to adequately support individuals who were released from institutions, further contributing to the current high prevalence of police/SAMI interaction (Iacobucci, 2014).

Research has also found that the risk for violence, and thus police contact, is substantially higher for individuals with severe mental disorder living in socially disorganized communities (Hiday, 2006; Silver, 2006). Socially disorganized communities are characterized by “long-term, unremitting concentrated poverty; high unemployment; low levels of education; meager opportunities; resource deprivation; physical deterioration; and the breakdown of micro institutions, especially the family, which give
meaning, guidance, and sustenance to individuals, and which exert social control over them” (Hiday, 2006, p. 321). The following section will provide a detailed summary of the literature regarding the relationship between community structure and mental disorder.

1.2. Social Ecology of Mental Disorder

1.2.1. Social Disorganization Theory

The concept of social disorganization was initially applied by sociologists at the University of Chicago during a period of rapid urbanization during the early 1900s. The theory asserts that differences in the spatial distribution of crime and delinquency can be attributed to the structural and cultural characteristics of a community. In general terms, social disorganization refers to the “inability of a community structure to realize the common values of its residents and maintain effective social controls” (Sampson & Groves, 1989, p. 777).

In *Juvenile Delinquency and Urban Areas*, Shaw and McKay (1969) investigated the ecology of crime and delinquency in American cities, utilizing data for several different periods, ranging from 1900 to 1934. Through their pioneering work, Shaw and McKay (1969) identified various conditions existing in local communities that correlate with differential rates of delinquency. Specifically, they argued that residential mobility, ethnic heterogeneity, and low socioeconomic status lead to community social disorganization, which, in turn, increases crime and delinquency rates.

Sampson and Groves (1989) lend support to Shaw and McKay’s previous empirical findings regarding community structure and crime; low economic status, ethnic heterogeneity, and residential mobility contribute to an increase in community crime rates. Additionally, they proposed two supplementary factors representative of social disorganization: family disruption and level of urbanization. The results of their investigation led them to conclude that communities characterized by sparse friendship networks, unsupervised teenage peer groups, and low organizational participation (representative of low social control), have high crime and delinquency rates. Structural characteristics of community social disorganization, as measured by socioeconomic
status, residential stability, family disruption, heterogeneity, and urbanization, negatively influence these intervening dimensions of informal social control, which in turn contribute to an increase in rates of personal and property victimization. These findings contribute to the evidence supporting a social disorganization approach to the explanation of crime (Sampson & Groves, 1989).

1.2.2. Community Structure and Mental Illness

Evidently, social disorganization theory has traditionally been used to explain the variation in crime rates within urban areas. However, more recently, there has been an increased focus in the literature on the social ecology of mental disorder. The relationship between “community life and mental life” was originally presented in Faris and Dunham’s (1939) *Mental Disorder and Urban Areas*. Faris and Dunham (1939) believed that, while important, physiological explanations cannot fully account for mental illness. Rather, mental disorder is the product of social interaction with both the physical and social environment (p.152). Through their ecological study of schizophrenia and other psychoses, Faris and Dunham (1939) found that highly socially disorganized areas are associated with higher rates of mental illness. More specifically, their findings indicated that the prevalence of specific types of schizophrenia is dependent on community conditions in urban areas. To explain this relationship they state that:

Successful transmission of the essential standardized cultural view of the world, and therefore successful production in the person of a sufficiently normal mental organization, requires a normal family life, normal community life, reasonable stability and consistency in the influences and surroundings of the person, all supported on a continuous stream of intimate social communication. In the disorganized areas of the large industrial city many of these necessary conditions are lacking. (p. 158)

In other words, socially disorganized areas are conducive to a lack of communication, reinforcing stress and isolation, and thus increasing the prevalence of mental disorder in these environments.

Stress mediates the relationship between community context and mental illness. Research conducted by Agid, Kohn, and Lerer (2000) indicates that high levels of stress, particularly early in life, can trigger genetic predispositions to psychiatric illnesses (e.g.
major depression, schizophrenia, or post-traumatic stress disorder). Such high levels of stress are especially common in socially disorganized areas characterized by poverty.

Since Faris and Dunham’s (1939) investigation, multiple additional studies have demonstrated a significant relationship between mental health and community structure. For example, when accounting for individual characteristics, Silver and colleagues (2002) established that neighbourhood disadvantage (e.g. public assistance income, unemployment, living below poverty line) and residential mobility (e.g. percentage of rental housing units) are associated with higher rates of depression and substance abuse. Residential mobility was also found to be associated with higher rates of schizophrenia.

Health geography studies further support a relationship between the built environment and mental health (e.g. Evans, 2003; Weich, Blanchard, Prince, Burton, Erens, & Sproston, 2002). As highlighted by Evans (2003), poor quality housing, as well as residential density, is found to be directly associated with increased levels of psychological distress. Srinivasan, O’Fallon, and Derrry (2003) also suggest a correlation between health and the environment, noting that rates of disease, chronic illness, obesity, and mental illness are often higher among minorities and low-income communities (p. 1447).

It is also important to acknowledge, however, that the interaction between mental illness and community structure is complex; while social disorganization may have an impact on the incidence of mental illness, it is also possible that individuals with mental illness may gravitate to socially disorganized neighbourhoods because of their poverty and/or lack of ties with family or friends (Evans, 2003; Silver, 2000; Silver, et al., 2002). This “selection effect” or “selection bias” suggests that “people choose where to reside on the basis of factors that may be related to the behavior in question” (Silver, Mulvey, & Monahan, 1999, p. 251). It is possible that this concept of “self-selection” may contribute to an over estimation of the association between environmental factors and mental health (Evans, 2003).
1.2.3. Community Structure and Risk for Police Contact

Based on the extant literature pertaining to the relationship between the environment and health, socially disorganized communities are conducive to high rates of mental illness. As noted previously, individuals with mental health issues are at an increased risk for police contact (e.g. Borum, et al., 1997; Van Dorn, et al., 2012) and for those residing in areas characterized by social disorganization, this risk is even greater.

Violence is one type of incident that can bring SAMI into contact with police. Socially disorganized areas have been shown to have higher rates of violence among individuals with mental illness. For example, Silver, Mulvey, and Monahan (1999) conducted preliminary research investigating the relationship between violence risk among acute psychiatric patients (N = 293) and poverty levels in the neighbourhoods where they reside following release. Results indicated that concentrated poverty is significantly related to the overall amount of violence committed by these individuals “over and above” the effect of individual characteristics (Silver, et al., 1999, p. 237). Further research by Silver (2000) lends support to these findings, also demonstrating a relationship between neighbourhood characteristics of social disorganization and an increased risk for violence among released psychiatric patients. Although there is conflicting evidence regarding the relationship between mental illness and violence, it is important to note that not all SAMI individuals are violent, nor do all persons with mental illness come into contact with the police.

Notably, the consensus regarding this relationship now suggests that there is a relatively small subgroup of individuals living with psychosis who are at an increased risk for violence. However, there is disagreement as to why this may be the case. For example, Hiday (1995) posits that independently, mental illness is not a sufficient cause for violence and that is social context that mediates the relationship between the two. Specifically, “it is when severe mental illness is combined with antisocial personality and substance disorders, and is shaped by an environment of violence, that the behaviour of the severely mentally disordered is likely to become violent” (p. 130). Such ‘environments of violence’ are created by conditions of social disorganization and poverty. In contrast, however, research conducted by Brennan, Mednick, and Hodgins (2000) demonstrates a relationship between major mental disorder and violence, even after controlling for...
demographics, personality disorders, and substance abuse. In particular, they found that both men and women hospitalized for schizophrenia are significantly more likely to be arrested for violent offenses.

Community context is also associated with the likelihood of hospital readmission. A study on the reintegration of released forensic patients (N = 117) in the Lower Mainland of British Columbia found that the location of community placement following release is related to the frequency of return to inpatient care (Melnychuk, et al., 2009). Specifically, using Geographic Information System (GIS) techniques, the analysis indicated that following release patients primarily gravitated towards North East Vancouver and North West Surrey; regions of the greater Vancouver area characterized by socioeconomic deprivation marked by elevated levels of “unemployment, low income, poor education, and rental accommodation” (p. 161). These areas are also in close proximity to two major forensic health facilities. This spatial pattern was particularly evident for individuals who frequently returned to hospital.

The findings from these studies suggest that community structure, particularly areas characterized by social disorganization, are conducive to high rates of mental illness, an increased likelihood of violence among SAMI individuals, as well as high rates of hospital readmission for forensic psychiatric patients. While these findings indicate a clear association between the environment and mental-health-related police contacts, much of the existing research only addresses this relationship in the context of urban settings. Alternative environments should also be considered. The current thesis seeks to demonstrate a relationship between characteristics of social disorganization and rates of mental-health-related police contacts in the framework of rural northern environments. In the following chapter, I outline the impact that existing obstacles in rural and northern environments have on police response to mental-health-related emergencies.
Chapter 2.
Rural and Remote Northern Communities

Owing to the immense number of police encounters involving SAMI, and the unfortunate consequences that can occur (e.g. escalation, police use of force), it is apparent that further research needs to address the nature of these interactions so that appropriate resources to handle these situations effectively may be established. Notably, the primary focus of much research on policing has been in the context of urban and suburban police organizations (Payne, et al., 2005; Weisheit, Wells, & Falcone, 1994; Wood & Trostle, 1997). While this research has provided a wealth of information pertaining to policing issues, it is important to consider the differences that exist in rural and northern police departments. Prior to discussing the implications these differences have in the context of police response to mental-health-related emergencies, it is important to highlight the literature that differentiates police roles in urban versus rural environments.

2.1. Police Roles: Urban vs. Rural Settings

Generally, from urban to rural environments, police roles contrast between that of the “urban” law enforcer who primarily utilizes methods of crime control, and the “rural” officer who emphasizes crime prevention and performs various service activities within the community (Landau, 1996; Payne, et al., 2005). Consequently, research consistently stipulates that police duties in small communities extend beyond those of urban police officers and that officers working in rural or northern settings carry out a wider range of tasks than in urban departments; many of which are unrelated to crime incidents (Weisheit et al., 1994). Furthermore, rural police “fulfill several roles simultaneously,” many of which fall outside the traditional law-enforcement-oriented policing mandate (Payne, et al., 2005 p. 38; Wood & Trostle, 1997).

Evidently, there are numerous considerations with regard to policing these communities that may not be apparent in urban settings. To highlight police roles in rural settings, Weisheit, Wells, and Falcone (1994) identify three themes that are related to the relationship between police and their community based on observations in small town
regions of the United States. They state that in rural environments: (1) police are accountable for their community, (2) police are more connected with, and integrated into their communities owing to personal level interactions, and (3) rural police are oriented towards solving general problems rather than crime incidents exclusively.

As illustrated by Weisheit and colleagues (1994), in small towns, police are recognized as an integral part of the community. Moreover, as members of the community themselves, they often know offenders and victims personally. Owing to this high level of personal interaction, the level of formality for resolving incidents also varies from rural to urban environments (Payne, et al., 2005). Close personal relationships with community members often provide police with the opportunity to informally resolve issues as an alternative to arrest or formal processing. However, the small population and close connections may also result in higher expectations of the police by the public and leave officer actions highly visible, thus reducing their level of discretion and increasing their level of accountability (Weisheit, et al., 1994).

To further emphasize the contrast between policing in urban versus rural settings, Wood and Trostle (1997) explore police roles in remote Arctic communities; specifically in Canada’s Baffin Region, using RCMP file data collected for a multi-year Baffin Region Crime and Justice study. Findings from their analysis suggest that, in light of geographic isolation and a considerable lack of economy, police in Arctic and sub-Arctic communities perform an extensive number of tasks that go beyond the duties of officers working in urban regions. Moreover, police officers originally from the south of Canada who primarily work in these communities are often unfamiliar with the various environmental and cultural differences, possibly impacting the effectiveness of their policing strategies.

In their review of Yukon’s Royal Canadian Mounted Police (RCMP) “M” Division, Arnold, Clark, and Cooley (2010) encapsulate the responsibilities of police in northern communities:

Policing in northern communities is a high-demand, high-expectation occupation: there is a high demand on members’ resourcefulness and creativity and high expectations by citizens, who expect members to not only engage in law enforcement but also be visible and participate in community life. The process by which members become accepted by the
community and establish relationships with community members is one of the most crucial aspects of policing in northern communities. (p. 7-8)

Evidently, as previously asserted (Landau, 1996; Payne, et al., 2005), a “law enforcement” approach may be ideal in urban settings, albeit, in remote and rural regions, establishing a strong relationship with the community is essential (Wood & Trostle, 1997).

2.1.1. Additional Considerations

The presence of an Aboriginal population is an additional consideration for police in rural or northern regions, particularly with regard to mental-health-related emergencies. Although Aboriginal people only make up a small percentage of Canada’s total population (3.8%), they comprise a substantial proportion of individuals incarcerated at both the Provincial and Federal levels of the Canadian justice system (British Columbia Provincial Health Officer [BCPHO], 2013). Despite representing only 4.8% of British Columbia’s population, in 2011, 28.4% of admissions to British Columbia correctional centres were Aboriginal (BCPHO, 2013). Furthermore, Aboriginal people in British Columbia have also been found to experience much higher rates of mental health issues and substance abuse problems compared to other residents (BCPHO, 2009), particularly within the incarcerated population (Somers, Cartar, & Russo, 2008).

A report generated by Somers and colleagues (2008) on incarcerated offenders sentenced in British Columbia between 1997 and 2004, established that 19.2% of Aboriginal offenders had a diagnosed mental disorder and 11.2% had a substance use disorder (Somers, et al., 2008). Moreover, of the 95,797 records included in the study population, 28.5% of Aboriginal offenders had concurrent mental health and substance use issues compared to 23.6% of the total study sample (Somers, et al., 2008). It is possible, however, that this is an underestimate of the true prevalence of mental disorder within this population; all relevant information is not represented in the data (e.g. omission of records corresponding to FASD, developmental disabilities, and brain injury).

Additional research has found that in Yukon communities, where 25% of the population identifies as Aboriginal (Yukon Bureau of Statistics, 2006), “vulnerable citizens” (i.e. intoxicated people, individuals with cognitive disorder such as fetal alcohol spectrum
disorder (FASD), or mentally ill persons) are most likely to come into contact with police (Arnold et al., 2010). Other research supports this notion, stipulating that in rural and northern areas, police spend a significant amount of time responding to calls involving intoxicated individuals, usually under the influence of alcohol (Arnold et al., 2010, Landau, 1996; Payne, et al., 2005). It is noteworthy, however, that abuse of solvents is also common in remote Northern Canadian communities (Canadian Centre on Substance Abuse, 2014).

As noted by Arnold and colleagues (2010), police frequently encounter individuals with neurocognitive disorders. Fetal alcohol spectrum disorder is a particularly prevalent issue among Aboriginal populations (Pacey, 2010). FASD is the “umbrella terminology adapted to cover the range of disorders of permanent brain damage or abnormalities associated with pre-natal alcohol exposure” (Mela & Luther, 2013, p. 46). Aboriginal-specific research has found that combined rates for fetal alcohol syndrome and fetal alcohol effect (both encompassed under FASD) are as high as 46 per 1000 and 25 per 1000, for the Yukon and northwest British Columbia respectively (Pacey, 2010, p. 17). Seemingly, it is important for police to have a comprehensive understanding of such disorders in order to be able to react effectively while using minimal physical intervention.

Evidently, Aboriginal people are at a greater risk for mental health and substance abuse issues, which in turn, may increase the likelihood of police contact (British Columbia Provincial Health Officer, 2009). This is an important consideration for police, as cultural differences may influence not only their methods of approach, but also individual and community response to the actions of the police.

The extensive responsibilities of police in rural and northern settings can be attributed to various factors, including the accessibility and availability of services, geographic isolation, high rates of addiction and mental health issues, and cultural differences. Additional considerations and challenges in these environments may impact an officer’s ability to appropriately respond to mental-health-related crises and also influence the quality of interaction with individuals involved. The following sections will provide a thorough examination of these challenges and their impact on police response to mental-health-related emergencies.
2.2. Response to Mental-Health-Related Emergencies

2.2.1. Access to Services

Accessibility and a lack of appropriate services in rural and northern communities is a recurring theme throughout the literature. Specifically, the availability of psychiatric and social services in these communities is either non-existent or not easily accessible (Landau, 1996; Payne, et al., 2005; Weisheit, et al. 1994). As a result, police are the primary 24-hour resource available for responding to mental health emergencies.

The general lack of resources in these settings may be attributed to a scarcity of qualified permanent employees, (Landau, 1996) and minimal staffing in health centres (Herrington, 2012). Particularly, the significant shortage of health care professionals can be credited to the remoteness and isolation that restricts medical professionals from interacting with other medical peers and furthering their education (Kirby & Keon, 2006).

Additionally, in rural communities, resources are often spread thin; police have longer distances to travel to the nearest health centre (Herrington, 2012; Ontario Mental Health and Addictions Knowledge Exchange Network [OMHAKEN], 2009), and fewer transportation options are available (OMHAKEN, 2009). While 80% of Canada’s population lives in urban settings, many live in remote regions where the nearest mental health service may be a far commute, or not accessible by road (Cotton & Coleman, 2010). Moreover, most mental-health-related calls generally occur in the late evening and on weekends when the fewest resources are available (Lee, Brunero, Fairbrother, & Cowan, 2008). It is noteworthy that lack of access, owing to both geographical barriers and limited available services, greatly contributes to the criminalization of individuals with mental illness who live in rural regions. A study conducted in Mississippi exploring the criminalization of people with serious mental illness living in rural areas found that 60% of SAMI individuals are held in jail without criminal charges (Sullivan & Spritzer, 1997). When hospital beds, access to mental health services, or transportation to hospitals is not immediately available, SAMI individuals are detained in jails without criminal charges and without appropriate treatment (Sullivan & Spritzer, 1997).
The evident “difficulty of geographic access” (Wood & Trostle, 1997, p. 378) and need for services generate various obstacles for police; and thus, communities highly reliant on medical and mental health services are left without basic resources necessary to address these prevalent issues.

2.2.2. Homelessness

As previously stated, mental illness and addiction are highly prevalent among the homeless population (CMHA, 2014). While homelessness is ostensibly visible in urban contexts, there is a dearth of research pertaining to the extent of homelessness in Canada’s rural communities (Schiff & Turner, 2014). Individuals with mental health and addiction issues are presented with additional obstacles in these communities that may contribute to an increase in police encounters. For example, owing to the small and personal nature of rural areas, SAMI individuals may develop a poor reputation within the community and have a difficult time finding housing. “Landlords are able to 'choose' more desirable tenants, often creating access barriers for those with mental health, addiction, social assistance incomes, and Aboriginal or visible minority” (Schiff & Turner, 2014, p. 22).

Moreover, SAMI individuals who often end up on the street do not have a place to ‘congregate’ (i.e. community shelter or soup kitchen) and lack access to the support services necessary to address their mental health and addiction concerns (Schiff & Turner, 2014). This can be attributed to limited service availability in rural and northern communities. Consequently, comparable to urban centres (Wilson-Bates, 2008), the homeless population in rural areas require a proportionately large allocation of police resources.

Furthermore, many rural communities, specifically in Canada, are located in northern regions of the country, presenting unique challenges to SAMI and homeless individuals. As there is evidently extreme temperature variation in these regions, individuals suffering from mental illness may lack the proper judgment necessary to seek appropriate shelter in the winter and pose a danger to themselves. Often police will then
apprehend them and take them to hospital for their own safety (Cotton & Coleman, 2010). In Canada’s North, the only viable holding location is often a police jail cell.

### 2.2.3. Collaboration with Health Professionals

Although access to services is important for successful police responses to mental health emergencies, establishing a strong relationship with local mental health professionals is essential for improving policing and mental-health-related issues within the community.

Systems theory postulates that: “all parts of an organization are interrelated and dependent upon one another, so that change in one area will affect others” (Seagrave, 1997 as cited in Cotton & Coleman, 2010, p. 301). As sub-systems in the greater organization of ‘social service,’ police agencies and the mental health system are highly reliant upon one another (Cotton & Coleman, 2010). Independently, mental health services and police cannot effectively respond to mental health emergencies (O’Brien & Thom, 2014) and thus, an imbalance in these sub-systems may have serious repercussions for the organization as a whole. For example, a lack of mental health services contributes to a substantial increase in police contact with SAMI, and in turn, significantly contributes to their workload. This may be particularly evident in northern rural regions, where mental health resources are extremely scarce.

Owing to challenges in rural low-density regions, it is even more imperative for police and mental health services to work together (Cotton & Coleman, 2010). However, provincial police organizations (i.e. RCMP) frequently rotate officers in isolated postings, making it difficult to build lasting alliances with mental health services (Cotton & Coleman, 2010). Furthermore, with variation in the structure of police organizations and mental health systems across the country, as well as diverse geography, it is difficult to establish a standardized approach to policing (Cotton & Coleman, 2010).

The struggle for successful cooperation between police and health professionals may also be due to the contrasting philosophies of these two specialized professions regarding the population of individuals living with mental illness. This contrast can cause a severe impairment in the quality of communication between the two professions that is
crucial for successful collaboration (Fry, O’Riordan, & Geanellos, 2002; Skubby, Bonfine, Novisky, Munetz, & Ritter, 2013).

It is noteworthy that apprehension under the Mental Health Act and transporting an individual to hospital is time-consuming for police and often leads to frustration (Durbin et al., 2010). Qualitative research conducted in Hawaii on police as frontline mental health workers reveals that it is common for police to become frustrated after apprehending a person with mental illness, taking them to the hospital for care or assessment, and waiting for hours, only to have them immediately released (Green, 1997, p. 484). Police want to feel justified in bringing an individual to hospital for assessment, but ultimately it is up to hospital personnel to determine whether the individual meets the criteria to be held involuntarily for evaluation. Frequently, an individual may be brought to hospital meeting the criteria, but by the time they see a physician for assessment their symptoms have subsided and they have significantly calmed down to the point that they are immediately released (Green, 1997). Evidently, frustration on both parts contributes to further impairment in police/mental health system partnerships.

Some recent efforts for successful collaboration between services have proven effective at enhancing support to vulnerable citizens within the community. For instance, the PSP model, implemented in Denmark, involves information sharing and collaboration between the local Police Department, Social Services, and Psychiatry/Mental Health Services (Sestoft, Rasmussen, Vitus, & Kongsrud, 2014). An evaluation of this model of working practice through structured interviews and focus groups indicated that PSP cooperation provides improved assistance for vulnerable citizens, which in turn prevents crime and follow up cases. Furthermore, the cooperation between sectors better facilitates feedback, coordination, and information exchange (Sestoft, et al., 2014).

Recent research conducted by Wood and Beierschmitt (2014) highlights the importance of service intervention for SAMI individuals following their encounters with police. This “upstream engagement” by city agencies (i.e. mental health services) advocates a preventative approach to future encounters with police and focuses on the long-term recovery of the individual (Wood & Beierschmitt, 2014). This research further
underscores the significance of inter-agency cooperation and partnership development with mental health organizations.

Collaboration between police and mental health professionals is also a key component of many police mental health training programs (Durbin et al., 2010; Skubby et al., 2013). Seemingly, joint collaboration between police and mental health services is an impetus for enhancing response to mental health emergencies in the community, and substantially reducing the level of challenge police face through their encounters with SAMI.

2.2.4. Police Training

The high prevalence rates of police/SAMI encounters signify that mental health is a growing demand in the line of police work and more training and resources are needed (Durbin et al., 2010). Successful resolution of mental health emergencies is highly dependent on the effective training of police force members. Compton and colleagues (2010) emphasize the importance of comprehensive police training: “the schism between what officers are expected to do and what they are trained to do can be detrimental to the officers themselves, people affected by mental illnesses and their families, and members of the community at large” (p. 73). Therefore, providing police with the necessary information and resources to diminish this apparent discord between expectation and reality is essential for improving the outcome of SAMI encounters.

Previous research indicates that specialized training improves officers’ understanding of mental illness and the effects of mental illness on an individual’s behaviour (Reuland, et al., 2009). For example, probably the most well-known and widely implemented specialized response model is the Memphis Crisis Intervention Team (CIT); a voluntary first responder program that trains police in helping individuals with mental health issues (CIT International, n.d.). CIT training has become increasingly popular among police departments for improving interactions between police and persons with mental health issues. In 2008, there were over 400 CIT programs in operation throughout the United States (Watson, Morabito, Draine, & Ottati, 2008) and according to CIT International (n.d.), there are currently 3,000 programs operating worldwide.
Members of CITs work in collaboration with community mental health services to ensure that persons with serious mental illness who come in contact with police are provided with the appropriate treatment and services necessary to address their mental health issues. A multitude of research has established that CIT training is highly effective in a variety of domains: developing positive perceptions and confidence among police, establishing efficient response times, diverting individuals with mental illness away from the criminal justice system, and improving psychiatric symptoms among those suffering from serious mental illness and substance abuse issues (CIT International, n.d.). Moreover, the program has largely decreased officer injury rates in crisis response contexts (CIT International, n.d.).

Using patrol officer data in four Chicago Districts, Watson, Ottati, Morabito, Draine, Kerr, and Angell (2010) examined the effectiveness of CIT training and its impact on the outcomes of police encounters with persons with mental illness. Results from regression analysis indicate that CIT trained officers are more likely to direct individuals into the mental health system (i.e. emergency hospital assessments or community mental health services). Similarly, recent research conducted by Compton and colleagues (2014a) established that when compared to non-CIT trained officers, CIT trained officers are less likely to arrest, and more likely to refer an individual to services or transport them to a facility. Moreover, CIT trained officers have consistently better scores on de-escalation skills, referral decisions, and knowledge, and exhibit more diverse attitudes about mental illness (Compton et al., 2014b).

Evidently, CIT training has practical implications for outcomes of police encounters involving SAMI individuals. CIT is rated highly among police officers who have completed the training and is perceived to have a positive impact in various domains: improved community and individual safety, improved access to mental health services, enhanced officer skills, and improved confidence in police ability to respond to SAMI (Bonfine, Ritter, & Munetz, 2014, p. 347). Police attitudes regarding CIT training and its impact are also positively associated with departmental effectiveness (Bonfine et al., 2014).

In spite of the recent success of programs such as CIT, policies implemented in urban police departments may “erroneously be seen as feasible in rural departments”
(Payne, et al., 2005, p. 31). With regard to police training, research indicates that rural areas are often encouraged to utilize urban models of CIT or other diversion techniques that may not be appropriate in rural settings (Compton, et al., 2010; Skubby et al., 2013). Lack of consideration for the unique barriers and challenges these communities face creates major obstacles for implementing such models.

Between 2006 and 2009, Skubby and colleagues (2013) conducted nine focus group interviews in six rural communities with law enforcement officials and mental health professionals to explore the applicability of CIT in these unique environments. Primarily they found that mental health professionals and law enforcement have different ways of thinking about the population of individuals living with mental illness, thus causing a severe impairment to the quality of communication between these professions that is crucial for successful collaboration. Secondly, there is a lack of internal resources that are needed to implement and sustain diversion training in small police departments (Skubby et al., 2013).

Despite the numerous challenges posed by rural environments, implementation of CIT programs in these communities still resulted in increased cooperation, communication, and understanding between mental health and police personnel (Skubby et al., 2013). Furthermore, participants expressed that both the ability of police to respond to SAMI and their relationship with the community greatly improved.

‘Training and Education about Mental Illness for Police Organizations’ (TEMPO), is a contemporary Canadian model that builds on existing training programs pertaining to policing the in context of mental health encounters (Coleman & Cotton, 2014). Developed under the Mental Health Commission of Canada, TEMPO is a five-level education model aimed at improving police response to SAMI individuals. The framework is founded on seven essential areas. To summarize, these include knowledge and skills related to: (1) the context within which SAMI interactions occur, (2) understanding the nature and effects of mental illness, (3) relationships with mental health agencies, (4) intervention strategies and de-escalation techniques, (5) risk assessment, (6) use of discretion and ethical decision making, and (7) self-evaluation and assessment (Coleman & Cotton, 2014).
The model is designed to target all law enforcement personnel who respond to incidents involving SAMI and focuses primarily on anti-stigma education and ethical decision-making. For comprehensive training, various learning strategies should be implemented and trainers should include mental health professionals, persons with mental illness, and family members of persons with mental illness, who have positive attitudes toward the police (Coleman & Cotton, 2014).

Although barriers to the implementation of mental health police training evidently exist in rural environments, there are many aspects that markedly enhance the effectiveness of police response to SAMI. Accordingly, future research should further explore the applicability of urban training models such as CIT and the recent TEMPO model within rural communities so that appropriate modifications can be made to meet the unique characteristics of these settings.
Chapter 3. Data and Methods

3.1. The Present Study

Despite the considerable extant research regarding police encounters with severely addicted and/or mentally ill individuals (SAMI), there is a substantial lack of literature pertaining to these interactions in the context of rural and northern communities. Police in these unique regions face numerous challenges in their responses to mental-health-related emergencies and further insight is needed to enhance the effectiveness of police response to SAMI individuals. Owing to a lack of previous research related to policing and mental health in rural and small towns around the world, this research is exploratory in nature.

I would like to remark that it was my original intention to conduct a qualitative investigation of this topic. Specifically, I proposed to examine police use of section 28 of the Mental Health Act in northern regions of British Columbia (BC) by interviewing both RCMP officers and hospital personnel. However, due to numerous access issues, the current method of analysis was the only means by which to obtain relevant data pertaining to mental health and policing in northern British Columbia. While I received extensive support from numerous individuals within these professions, unfortunately, owing to administrative issues, I was unable to obtain organizational ethics approval from both police and health services within a realistic time frame.

Alternatively, keeping in line with the general theme of the originally proposed research, this study explores an association between socially disorganized environments and rates of mental-health-related police contacts in regions of northern British Columbia. Furthermore, the spatial location of Mental Health Act calls with respect to the location of health care services is examined in order to explore the relationship between health care service accessibility and mental-health-related police contacts.
3.2. Background: Northern British Columbia

Northern British Columbia is a unique region of Canada characterized by diverse climates and landscape (Destination British Columbia, 2015). The land area extends to Queen Charlotte Islands (west), McBride (east), and Yukon and Alaska borders (north) (Tourism British Columbia, 2008). According to 2006 census information, this portion of British Columbia constitutes 61.8% of the total land mass and yet comprises only 6.2% of the provincial population (Tourism British Columbia, 2008). See Figure 3.2 for a map of northern BC’s population distribution. Since the 1971 census, Statistics Canada has consistently defined an urban area as having a population of at least 1,000 and a population density of 400 or more people per square kilometer; all territory not meeting these standards is classified as rural (Statistics Canada, 2011a). Based on the evident low population density within northern British Columbia, all localities that fall within these boundaries are classified as rural.

Generally, the region has a young demographic, with 62.9% of the population under the age of 45 (compared to 57% provincially). Employment earnings are higher in northern BC than the provincial average; however, unemployment rates are also higher (9.1% vs. 6.0% respectively) (Statistics Canada, 2006, as cited in Tourism British Columbia, 2008). Economic contributions primarily consist of forestry and logging with support activities, mining, and oil and gas extraction (Work BC, 2015). Demographic and climate information for northern British Columbia are summarized in Table 3.1 and 3.2 respectively.

It is also noteworthy that a substantial proportion of British Columbia’s Aboriginal population resides within northern BC boundaries. The proportion of BC’s total population who identify as Aboriginal is 4.8% (Statistics Canada, 2006a); however, based on health authority boundaries, the northern portion of the province has some of the highest percentages of Aboriginal persons (Northwest 30.3%, Northern Interior 13.4%, Northeast 12.35%) (Foster, Keller, McKee, & Ostry, 2010).

As noted in the literature review, Aboriginal people in British Columbia have been found to experience much higher rates of mental health issues and substance abuse problems compared to other residents (BCPHO, 2009), particularly within the incarcerated
population (Somers, et al., 2008). Generally, however, rates of mental illness (depression/anxiety) in northern BC (Northwest 23.2%, Northern Interior, 21.2%, Northeast 18.8%) are comparable to the provincial average (21.8%) (Provincial Health Services Authority, 2010).

Notably, crime rates in British Columbia greatly exceed Canada’s national average, and Prince George, the most populated city within northern BC (70,981) (Statistics Canada, 2006b), has been deemed Canada’s ‘most dangerous city’ by Maclean’s magazine (2010). Prince George also houses the University of Northern British Columbia, resulting in a large student population residing in this locality.

The Royal Canadian Mounted Police (RCMP) are primarily responsible for policing in British Columbia (Ministry of Justice Police Services Division, 2013); they police 67% of BC’s provincial population (equivalent to 2.7 million people), and 174 sub-jurisdictions. Specifically, the RCMP’s North District is responsible for policing the upper two thirds (72%) of BC, much of which falls within the boundary lines of northern British Columbia. This policing district includes 40 detachments and over 1,100 employees (RCMP, 2012a). It is important to note that the North District extends slightly further south (to Bella Bella, Alexis Creek, and 100 Mile House) than the northern BC tourism area discussed previously; however, the entire tourism region is encompassed in this policing district. Boundaries for the north region of British Columbia (as determined by RCMP North District borders) are visible in Figure 3.1.
Table 3.1  Northern British Columbia Demographic Information

<table>
<thead>
<tr>
<th>Census 2006</th>
<th>Northern British Columbia</th>
<th>BC</th>
<th>% of Provincial Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land Area (km²)</td>
<td>571,324</td>
<td>924,815</td>
<td>61.8%</td>
</tr>
<tr>
<td>Population</td>
<td>108,868</td>
<td>4,113,487</td>
<td>6.2%</td>
</tr>
<tr>
<td>Avg. Annual Earnings</td>
<td>$46,255</td>
<td>$42,230</td>
<td>$4,025</td>
</tr>
<tr>
<td>Unemployment Rate</td>
<td>9.1%</td>
<td>6.0%</td>
<td>3.1</td>
</tr>
</tbody>
</table>

Note. Adapted from "Northern British Columbia Regional Profile: Building Tourism With Insight," Tourism British Columbia, 2008.

The Northern British Columbia tourism region includes the following Census Divisions: Bulkley-Nechako, Fraser-Fort George, Kitimat-Stikine, Northern Rockies, Peace River, Skeena-Queen Charlotte and Stikine.

Table 3.2  Climate Information for Major Centres in Northern British Columbia

<table>
<thead>
<tr>
<th>City</th>
<th>Average Yearly Temp (°C)</th>
<th>Average Yearly Snowfall (cm)</th>
<th>Average Yearly Rainfall (mm)</th>
<th>Average Yearly Sunshine (hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prince Rupert</td>
<td>7.1</td>
<td>126.3</td>
<td>2,468.5</td>
<td>1,299.1</td>
</tr>
<tr>
<td>Terrace</td>
<td>6.3</td>
<td>375.4</td>
<td>970.1</td>
<td>1,471.2</td>
</tr>
<tr>
<td>Kitimat</td>
<td>6.8</td>
<td>423.9</td>
<td>1,766.7</td>
<td>1,415.2</td>
</tr>
<tr>
<td>Fort St. John</td>
<td>2</td>
<td>185.6</td>
<td>312.6</td>
<td>2,164.8</td>
</tr>
<tr>
<td>Prince George</td>
<td>4</td>
<td>216.1</td>
<td>418.9</td>
<td>1,932.7</td>
</tr>
</tbody>
</table>

Note. Adapted from "Northern British Columbia Regional Profile: Building Tourism With Insight," Tourism British Columbia, 2008.

Based on a minimum 15 years of data during the period 1971-2000.
Figure 3.1  British Columbia, North Region
Figure 3.2  Northern British Columbia, Dissemination Area Populations, 2006
3.3. Data Sources

3.3.1. Police Data

The primary data source for this study was gathered from the Royal Canadian Mounted Police Information Retrieval System (PIRS) and made available through their partnership with Simon Fraser University’s Institute for Canadian Urban Research Studies (ICURS). It is important to note that the data must be aggregated to non-identifiable levels before public release and individual names have been removed from police records as to ensure anonymity.

Because this study investigated low-populated areas, longitudinal data were utilized so more events could be included in the analysis. The most complete records (August 1st, 2002 to July 31st, 2006) were used for analysis and identify all negative RCMP police contacts for the province of British Columbia. For the purposes of this study, the analysis focused only on a subset of section 28 Mental Health Act calls occurring in the RCMP’s North District. Only calls that had associated address level information were included (N = 7,413).

Mental Health Act Legislation

Section 28 of the MHA involves the apprehension by police of individuals (based on personal observations or information received), who are acting in (1) a manner likely to endanger themselves or others and (2) who exhibit apparent signs of mental illness. Following apprehension, police bring the individual to a physician for examination; usually in the Emergency Department of the local hospital. The physician then applies involuntary admission criteria and if met, fills out a medical certificate in accordance with section 22 of the MHA.

This certificate provides legal authority for the officer to bring the individual to the hospital for examination and psychiatric treatment. If this certificate is not completed, the person apprehended must be immediately released. However, if a certificate is completed on admission, a patient must still be discharged at the end of a 48-hour period. For hospitalization stay to be extended beyond the 48-hour period, a second medical
certificate is required (British Columbia Ministry of Health [BCMH], 2005). Police also have authority to detain and return to hospital civilly committed patients who are released on conditions and are in breach of those conditions.

Specifically, s.28 of the British Columbia Mental Health Act (1996) states:

(1) A police officer or constable may apprehend and immediately take a person to a physician for examination if satisfied from personal observations, or information received, that the person
(a) is acting in a manner likely to endanger that person's own safety or the safety of others, and
(b) is apparently a person with a mental disorder.

(2) A person apprehended under subsection (1) must be released if a physician does not complete a medical certificate in accordance with section 22 (3) and (4).

Note that under s. 28 the police may also convey an individual under a judicial warrant:

(3) Anyone may apply to a judge of the Provincial Court or, if no judge is available, to a justice of the peace respecting a person if there are reasonable grounds to believe that section 22 (3) (a) (ii) and (c) describes the condition of the person.

(4) On application under subsection (3), the judge or justice may issue a warrant in the prescribed form if satisfied that
(a) the applicant has reasonable grounds to believe that subsection (3) applies to the person respecting whom the application is made, and
(b) section 22 cannot be used without unreasonable delay.

(5) A warrant issued under subsection (4) is authority for the apprehension of the person to be admitted and for the transportation, admission and detention of that person for treatment in or through a designated facility.

(6) On being admitted as described in subsection (5), a patient must be discharged at the end of 48 hours detention unless the director receives 2 medical certificates as described in section 22 (3).

(7) On the director receiving 2 medical certificates as described in subsection (6), section 22 (6) and (7) applies to the patient.
3.3.2. Census Data

In order to investigate the association between community structure and rates of MHA calls in northern British Columbia, census data were used to capture factors that are representative of a social disorganization approach. Dissemination area level data from the 2006 census was used as it best corresponds to the timeframe of the RCMP data. Traditional characteristics representative of community social disorganization that have also been employed in mental-health-related research (e.g. Silver, 2000) include ethnic heterogeneity, population turnover, socioeconomic deprivation, and family disruption (Andresen, 2011; Sampson & Groves, 1989; Shaw & McKay, 1969). See Table 3.3 for variables and their measurements.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ethnic Heterogeneity</strong></td>
<td></td>
</tr>
<tr>
<td>Recent Immigrants</td>
<td>Total recent immigrant population between 2001 and 2006.</td>
</tr>
<tr>
<td>Aboriginal Identity</td>
<td>Percentage of the population who identify as Aboriginal.</td>
</tr>
<tr>
<td>Visible Minority</td>
<td>Percentage of the population who are classified under a visible minority group.</td>
</tr>
<tr>
<td><strong>Population Turnover</strong></td>
<td></td>
</tr>
<tr>
<td>Movers</td>
<td>Percentage of residents who moved to the dissemination area in the past year (2006).</td>
</tr>
<tr>
<td>Rental Units</td>
<td>Percentage of rental units.</td>
</tr>
<tr>
<td><strong>Socioeconomic Deprivation</strong></td>
<td></td>
</tr>
<tr>
<td>Unemployment Rate</td>
<td>The unemployed expressed as a percentage of the labour force.</td>
</tr>
<tr>
<td>Education</td>
<td>Percentage of the population with post-secondary education.</td>
</tr>
<tr>
<td>Family Income</td>
<td>Average family income.</td>
</tr>
<tr>
<td>Major Repairs</td>
<td>Percentage of dwelling units under major repair.</td>
</tr>
<tr>
<td><strong>Family Disruption</strong></td>
<td></td>
</tr>
<tr>
<td>Single-Parent</td>
<td>Percentage of lone parent families.</td>
</tr>
<tr>
<td><strong>Other</strong></td>
<td></td>
</tr>
<tr>
<td>Young Males</td>
<td>Percentage of young males ages 15 to 29.</td>
</tr>
<tr>
<td>Population</td>
<td>Dissemination area population.</td>
</tr>
</tbody>
</table>
3.3.3. Hospital and Health Service Locations

Finally, a spatial layer identifying hospital and health service locations was included. In the event that police may be required to travel outside northern boundaries to reach the nearest health service facility, all locations within British Columbia were considered in the analysis.

This information was obtained from DMTI Spatial Analytics, a company that provides GIS location based data in Canada. This dataset is current as of 2005, within the time frame of both the RCMP and census datasets. The layer name is BChcr and is a point file that contains 533 points across the province. Points are classified into different types, and a variety of health care facilities are included; from hospitals to care homes. For the purposes of this research, the distance of MHA calls to all types of health services was analyzed. However, hospitals, psychiatric services, and MHA designated facilities were highlighted (as police are required to bring an individual who is apprehended under the MHA to see a physician) to determine if accessibility to these specific facilities is related to the volume of MHA calls.

3.4. Analysis

Geographic Information System techniques were employed to geocode Mental Health Act data into their respective dissemination area (DA), making DAs the geographic basis for analysis. A dissemination area is a "small, relatively stable geographic unit composed of one or more adjacent dissemination blocks. It is the smallest standard geographic area for which all census data are disseminated" (Statistics Canada, 2011b). They typically have a population of 500 to 700 persons and boundaries follow road networks (Statistics Canada, 2011b). Typically, a concentration of multiple small DAs indicates a more populated region of the province.

Dissemination areas were used instead of census tracts owing to the limited availability of census tract information in rural northern regions of the province. Although police jurisdictions were also considered as the unit for analysis, assigning address level data to DAs ensured that the census data was very accurate. Furthermore, addresses
were required to determine the distance of the MHA call to the location of the nearest health service.

Dissemination areas that were enclosed within northern detachment boundaries or bordered a detachment boundary were included. It is important to note that geocoding the MHA records into DAs resulted in a loss of information pertaining to MHA calls without an associated address. According to Ratcliffe (2004), the minimum acceptable ‘hit rate’ for address-based datasets is 85%. If at least 85% of records geocode successfully, then it can be assumed that spatial patterns are a reliable representation of the phenomenon. In the context of urban environments this is generally a realistic target; however, there are a number of issues associated with geocoding records in rural and remote areas. Between August 1st, 2002 and July 31st, 2006 there were a total of 10,794 MHA calls in the north region of British Columbia; however, only 69.2% of these calls geocoded successfully (N = 7,476). While this is evidently below the generally accepted ‘85%’, owing to the limited availability of address-level police data in the North, the represented MHA calls were mapped and used for analysis.

Notably, a number of DAs were missing population information (N = 164). Owing to the lack of socioeconomic information associated with these areas, they were also removed from the analysis—any census unit with fewer than 250 persons does not have its socioeconomic information released because of privacy concerns. Within the removed DAs there were 63 MHA calls represented. It is noteworthy that owing to sparse dispersion of the population in northern/rural regions of the province, and the small geographic area of DA’s, some of the included regions had very low (or no) MHA calls. Overall, a total of 662 DAs representing 7,413 MHA calls were included in the final analysis. As a consequence of missing data, results should be interpreted with caution, as they may not fully represent the true spatial patterns of MHA calls in northern British Columbia.

In order to explore the relationship between MHA calls and characteristics of social disorganization, a series of negative binomial regressions were conducted. In criminological research it is rare to find count data where the means and variances are equal (MacDonald & Lattimore, 2010). Initial descriptives indicated that the data were in fact over dispersed and thus a negative binomial model was most appropriate for the
analysis. A total of 5 models were run on the predictor variables for MHA calls in the North. After the initial model had been run and assessed, a testing a down method was used; the most statistically insignificant variables were removed one at a time until a final model with only statistically significant variables remained. Sequentially, the variables single-parent, major repairs, and young males were removed. With the removal of young males, movers became statistically significant. Following the removal of these variables, a final regression model was run; the remaining predictor variables in the model were all significant. Based on extant social disorganization literature, it was expected that population, recent immigrants, Aboriginal identity, visible minority, population turnover, and unemployment would exhibit positive relationships with MHA calls. In contrast, education, and average family income were expected to be negatively associated with MHA calls.

In addition to exploring the relationship between community context and rates of MHA calls, local spatial analysis methods were employed using ArcGIS to identify local clusters of MHA calls in northern British Columbia. Within the field of criminology, local indicators of spatial association (LISA) methods emphasize the importance of spatial neighbours and are used to identify local crime clusters or ‘hot spots’. These clusters are “identified considering the crime rate of the spatial unit and its immediate spatial neighbours” (Andresen, 2011, p. 394). Moran's $I$, a global statistic providing an average representation of a study area is typically used in crime analysis; however, Anselin (1995), who originally developed the concept of LISA analysis, further proposed a local version of Moran’s $I$. Conversely, local Moran’s $I$ “calculates a statistic for each spatial unit of the study area” thus highlighting local variations within the larger environment (Andresen, 2011, p. 395).

Finally, in an effort to explore a possible spatial association between mental-health-related police calls and health care accessibility, Euclidean distances between the address location of MHA calls and the nearest local health centre were also calculated using ArcGIS. Distances specifically to hospitals, as well as MHA designated facilities, were also determined because police are required to bring an individual detained under the MHA to a physician for assessment. Euclidean distance rather than network distance
was used in light of problems associated with finding accurate spatial road networks in rural areas.
Chapter 4. MHA Calls and Community Context

This chapter explores the applicability of social ecological theory to the explanation of mental-health-related police contacts in rural northern British Columbia. Dating back to the work of Faris and Dunham (1939), numerous studies support an existing relationship between the environment and mental illness; that is, areas characterized by social disorganization have higher rates of psychological disorder (e.g. Evans, 2003; Silver et al., 2002; Srinivasan et al., 2003). Notably, however, past research examining this theoretical construct has only been applied in urban settings. Addressing this gap in the literature, negative binomial regressions were conducted to determine the applicability of social disorganization theory in rural northern environments. Regression results and an in-depth discussion of these findings are presented in the following sections.

4.1. Regression Results

As previously summarized, a series of negative binomial regressions were run on social disorganization variables to test for the presence of a relationship with rates of MHA calls in northern British Columbia. Results from the original and final models can be seen in Table 4.1. Initial models indicated that single-parent, major repairs, and young male variables were not significantly related to the number of MHA calls in a dissemination area. Akaike’s Information Criterion (AIC) for the final model is lower (AIC = 4327.931) than Model 1 (AIC = 4329.728), thus demonstrating a better fit. The results from the final model are presented below.

As seen in Table 4.1, the nine remaining social disorganization variables in the final model were all statistically significantly related to rates of MHA calls in northern British Columbia. As predicted, a higher population (1.002, $p < 0.001$), as well as higher percentages of rental units (1.029, $p < 0.001$) and visible minority population (1.016, $p < 0.05$) significantly corresponded to more MHA calls. Additionally, as expected, education (0.990, $p < 0.10$) and average family income (1.000, $p < 0.001$) were negatively associated with MHA calls, such that a higher income and a higher percentage of the population with post-secondary education corresponded to a lower number of MHA calls.
Notably, the remaining social disorganization measures exhibited directional relationships that were counter to the original theoretically based expectations: recent immigrants \((0.904, p = 0.001)\), Aboriginal identity \((0.990, p < 0.001)\), movers \((0.991, p < 0.10)\), and unemployment rate \((0.981, p < 0.01)\) each exhibited a negative association with rates of MHA calls. In other words, higher percentages of recent immigrants, Aboriginal identity population, and persons who moved to the DA within the previous year, corresponded to fewer MHA calls in the respective dissemination area. However, it is important to note that these latter three parameters are close to unity indicating a relatively low impact on MHA calls, despite being statistically significant. Possible explanations for these unexpected relationships will be discussed in detail in the following section.

While all variables in the final model were statistically significant, relative risk ratio values indicate a variation in the actual impact that each of these measures had on rates of MHA calls. For example, every one-unit increase in the percentage of recent immigrants resulted in about a 9.2% decrease in MHA calls. When a sample size is small, only large effects will be statistically significant; however, as the size of a sample increases, small effects can become highly statistically significant. Based on the current sample of MHA calls, despite highly significant results for social disorganization variables, they lack meaningful magnitude.
Table 4.1  Original and Final Models: Negative binomial regression results for MHA calls in northern British Columbia, 2002-2006

<table>
<thead>
<tr>
<th>Variables</th>
<th>Model 1</th>
<th>Final Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>1.002****</td>
<td>1.002****</td>
</tr>
<tr>
<td>Young Males</td>
<td>0.980</td>
<td>---</td>
</tr>
<tr>
<td>Recent Immigrants</td>
<td>0.904****</td>
<td>0.906****</td>
</tr>
<tr>
<td>Aboriginal Identity</td>
<td>0.988****</td>
<td>0.990****</td>
</tr>
<tr>
<td>Visible Minority</td>
<td>1.017**</td>
<td>1.016**</td>
</tr>
<tr>
<td>Movers (1 year)</td>
<td>0.992</td>
<td>0.991*</td>
</tr>
<tr>
<td>Rental Units</td>
<td>1.028****</td>
<td>1.029****</td>
</tr>
<tr>
<td>Unemployment Rate</td>
<td>0.980****</td>
<td>0.981***</td>
</tr>
<tr>
<td>Education</td>
<td>0.990*</td>
<td>0.990*</td>
</tr>
<tr>
<td>Family Income</td>
<td>1.000****</td>
<td>1.000****</td>
</tr>
<tr>
<td>Major Repairs</td>
<td>1.006</td>
<td>---</td>
</tr>
<tr>
<td>Single-Parent</td>
<td>1.004</td>
<td>---</td>
</tr>
</tbody>
</table>

Model Fit

| Akaike’s Information Criterion (AIC) | 4329.728 | 4327.931 |

*p < 0.10; **p < 0.05; ***p < 0.01; ****p <= 0.001; N = 662 (DAs)

4.2. Discussion

As conveyed by Freedman and Woods (2013), community context plays a “role in the mechanism by which some people develop mental illness, and behavioural and functional impairments” (p.7). Past research also indicates that environmental factors and regional demographics are predictive of criminal involvement (Shaw & McKay, 1969; Sampson & Groves, 1989). The complex interrelationship between ecology, mental health, and criminality, suggests that characteristics of community structure may influence rates of mental-health-related police contacts. Aligning with this conclusion, the regression results from this study indicated that social disorganization variables were in fact significantly predictive of MHA calls in northern British Columbia. Specifically, as hypothesized, a higher population, a higher percentage of rental units, and a higher
percentage of visible minority population in a dissemination area significantly corresponded to more MHA calls. Also as expected, education and average family income exhibited a negative association with MHA calls. Contrary to original expectations however, recent immigrants, Aboriginal identity, movers, and unemployment rate variables were also negatively related to the number of MHA calls in a dissemination area. It is important to keep in mind however, that although variables were significant, the actual impact of these variables on MHA calls in northern British Columbia was minimal. In the subsequent sections, I discuss each finding in the framework of the extant literature.

4.2.1. Ethnic Heterogeneity

Immigrant and Visible Minority Populations

In traditional social disorganization theory, the ethnic composition (ethnic heterogeneity) of a population has been proposed as a factor related to delinquency. Those who are from foreign areas or who have migrated from other areas of the country are at an economic disadvantage and forced to reside in low-income neighbourhoods. As a result, these low-income areas consist of an assortment of cultural backgrounds and values. As stated by Shaw and McKay (1969) “immigrant and migrant groups have brought together the widest variety of divergent cultural traditions and institutions…where there exists the greatest disparity between social values to which the people aspire and the availability of facilities for acquiring these values in conventional ways” (p. 319). Consequently, crime is a means employed by the people to acquire the economic and social values idealized in our culture.

It is also possible, however, that the period of persistent stress associated with language barriers, discrimination, financial hardship, and adaptation to a new place contributes to higher rates of mental illness among immigrant and visible minority populations (Hansson, Tuck, Lurie, & McKenzie, 2012; Kennedy & McDonald, 2006; Xu & McDonald, 2010). Based on this likelihood, it would seem that areas of northern British Columbia with high immigrant and visible minority populations would be associated with more mental-health-related calls to police. Although this was true for visible minority population, immigrant population exhibited an unexpected negative relationship with MHA calls, such that areas with a high immigrant population had fewer MHA calls to police.
The extant literature regarding the relationship between mental health and immigrant/minority groups provides mixed findings. Consistent with the results of this study regarding minority groups, research by Srinivasan and colleagues (2003) indicates that rates of mental illness are higher among this population (Srinivasan et al., 2003). Moreover, Stafford, Newbold, and Ross, (2010) note that immigrants, refugees, ethnocultural, and racialized (IRER) groups in Canada may be more exposed and susceptible to the negative effects of determinants of health such as income, social support, and education. Visible minorities and immigrants also face specific risks for mental illness such as language difficulties, discrimination, and the stress associated with acculturation (Hansson, et al., 2012).

A meta-analysis of the literature regarding the relationship between schizophrenia and migration indicates that “personal or family history of migration is an important risk factor for schizophrenia” and “the differential risk pattern across subgroups suggests a role for psychosocial adversity in the etiology of schizophrenia” (p. 12). In other words, social inequality among first and second-generation migrants may be an important contributory factor to the development of this particular mental disorder (Cantor-Graee & Selten, 2005). Other research demonstrates that the period of unemployment following migration significantly corresponds to psychological disadvantage among immigrants. A pattern of adjustment for immigrants is also evident; poor mental health associated with unemployment is worse at the 6-month period, compared to 18 and 42 months (Kennedy & McDonald, 2006).

While there is evidently a plethora of research demonstrating an association between immigrant/visible minority status and poor mental health, the ‘healthy immigrant effect’ may partially account for the unforeseen result that areas in northern British Columbia with a high immigrant population have fewer MHA calls to police. Research supporting a ‘healthy immigrant effect’ indicates that immigrants and most visible minority groups have overall better mental health than their white counterparts. Moreover, a higher density of the same visible minority ethnicity in an area is associated with better mental health (Stafford et al., 2010; Xu & McDonald, 2010). This may be attributed to “strong ethnic networks, accessible and available social support, as well as a sense of familiarity and belongingness” (Xu & McDonald, 2010, p. 31). The healthy immigrant effect
demonstrated in research by Stafford et al. (2010) is not explained by demographic and socioeconomic factors. Thus, it is possible that this subset of the population may be highly resilient or has alternative effective ways of coping with stress (Ali, 2002 as cited in Stafford et al., 2010)

A literature review on rates of mental illness and suicidality among IRER groups in Canada further supports the existence of a healthy immigrant effect. In their review of 17 articles, Hansson and colleagues (2012) determined that while the literature is diverse and not comprehensive, overall, rates of depression are lower among immigrant groups and visible minorities. Visible minorities also report lower rates of suicidal ideation and attempts, and immigrants have a lower suicide rate than the general population. The healthy immigrant effect provides a potential explanation for the unexpected results that were exhibited in the regression analysis.

It is important to highlight however, that the majority of Canadian research on mental health among immigrants and visible minorities has been primarily conducted in major cities of only 3 provinces (Hansson, et al., 2012). Therefore, owing to the high proportion of immigrants and visible minorities in rural Canada, further research needs to address the relevance of this effect in these environments.

**Aboriginal Population**

As previously noted, Aboriginal persons comprise 4.8% of the British Columbia population (Statistics Canada, 2006a); a substantial proportion of whom reside in the northern portion of the province (Foster, et al., 2010). In fact, over 50 First Nation communities are encompassed within northern British Columbia and policed by the RCMP (Ministry of Justice Police Services Division, 2013). Research indicates that Aboriginal people in British Columbia experience much higher rates of mental health issues and substance abuse problems compared to other residents (BCPHO, 2009; Patterson et al., 2008), particularly within the incarcerated population (Somers et al., 2008). The high prevalence of mental illness and addiction among this population may be partially credited to the history of colonization of Aboriginal peoples in Canada. Research conducted by Elias, Mignone, Hall, Hong, Hart, and Sareen (2012) provides evidence of the adverse effects colonization has had on Canada’s Aboriginal population. Findings indicate that
residential school victims, as well as their family members, exhibit extremely high rates of abuse history, suicidal thoughts, and suicide attempts. In rural isolated areas of British Columbia specifically, the most common mental health issues among the population are “residential school syndrome and cross-generational family violence, often associated with alcohol abuse and sexual assault” (Hunter, 2006, p. 174). Seemingly, both direct and intergenerational trauma is an unfortunate consequence of the residential school system in Canada.

Based on the high proportion of the Aboriginal population with mental health and addiction issues, particularly in British Columbia, it would seem that areas of the North with high Aboriginal identity population would exhibit higher rates of MHA calls. However, results from this study indicate the opposite; that is, dissemination areas with a high Aboriginal population corresponded to fewer MHA calls. While these findings conflict with original hypotheses, there are a number of possible explanations for this disparity.

While the history of colonization in Canada may be partially responsible for the high rates of mental illness and addiction among the Aboriginal population, it has also largely contributed to long-standing conflict between Aboriginal people and mainstream Canadian society (Cao, 2014). Understandably, the historical oppression and marginalization of these people has resulted in a strong distrust of government agencies, including the police (Chrismas, 2012). Lending support to this statement, a recent study conducted by Cao (2014) on confidence in the police found that Canadian Aboriginal people are significantly less confident in the police than the general population. Visible minorities were also found to be less confident in the police; however, this effect was not as strong.

The evident lack of trust that still exists among Aboriginal communities today may partly account for the unexpected relationship between Aboriginal population and MHA calls. Often, when an individual is in mental health crisis, a family member or friend who is concerned for their well-being will contact the police. For example, a study conducted in the Netherlands indicates that 15% of mental health calls to police are made by family or a friend, 19% are made by the individual experiencing a crisis, and 34% are from a bystander or neighbour (N = 492) (van den Brink, Broer, Tholen, Winthorst, Visser, &
Wiersma, 2012). However, if the individual experiencing a mental health crisis, their family, and the community as a whole, lack trust and confidence in the police, it is unlikely that the police would be contacted for assistance in these instances. Thus, it is possible that there is still a high prevalence of mental-health-related incidents among the Aboriginal population, but these individuals are not coming into contact with police in this particular context.

4.2.2. Population and Population Turnover

As predicted, areas with a greater population were shown to have higher rates of MHA calls. This is consistent with research conducted by Evans (2003) who found that residential density is associated with high levels of psychological distress (Evans, 2003). Studies that show the distribution of mental disorder in urban areas also indicate that the highest incidence is closest to populated city centres (Faris & Dunham, 1939).

Social disorganization theory generally asserts that frequent mobility of residents from one place to another makes it difficult for a community to develop a foundation of common interests and attitudes (Shaw & McKay, 1969; Silver et al., 2002). The instability resulting from the consequences associated with high residential mobility may be conducive to both delinquency and mental illness. For example, Silver et al. (2002) found residential mobility to be positively related to mental health. Specifically, a high percentage of rental units within a community corresponds to higher rates of depression, substance abuse, and schizophrenia (Silver et al. 2002). In light of these considerations, it was predicted that areas of northern British Columbia with high population turnover would have higher rates of mental-health-related police contacts.

Nevertheless, regression analysis of variables measuring population turnover provided mixed results; while the percentage of rental units was positively associated with MHA calls, the percentage of people who moved to the dissemination area in the past year was negatively associated with MHA calls. Typically, research investigating community social disorganization uses the percentage of rental units in an area to measure population turnover rather than the percentage of people who moved to an area within a given time frame (e.g. Melnychuk et al., 2009; Silver et al. 2002). Thus, simply the
choice of variable measurement could account for the unanticipated relationship exhibited by ‘movers’. It is also possible, however, that percentage of rental units is more a measure of socioeconomic deprivation (i.e. a large proportion of the population cannot afford to own housing and therefore must rent). Thus, if it is actually economic disadvantage that contributes to high rates of MHA contacts, residential mobility (as measured by movers 1 year) may not be an important factor for explaining rates of MHA calls within a rural context. Overall, findings regarding the relationship between residential mobility and mental-health-related police contacts in northern British Columbia are inconclusive.

4.2.3. Socioeconomic Deprivation

No known research directly investigates the role of socioeconomic deprivation in explaining rates of mental-health-related police contacts (particularly in the context of rural environments). However, contemporary research clearly indicates that socioeconomic deprivation is a significant contributory factor to both individual mental health and criminal involvement. Accordingly, it was expected that socioeconomic deprivation might partially account for mental-health-related police contacts in northern British Columbia. Consistent with past research exploring neighbourhood effects, this study employed average family income, education, and unemployment, as measures of socioeconomic deprivation (e.g. Freedman & Woods, 2013; Silver, 2000; Goldsmith, Holzer, & Manderscheid, 1998).

According to the Public Health Agency of Canada (PHAC, 2011) all three included measures of socioeconomic deprivation are key determinants of health. Specifically, of the 12 determinants of health designated by the PHAC (2011), income, education, and employment fall within the top four factors that impact Canadian well-being. Firstly, higher income often corresponds to more control and discretion over life circumstances thereby reducing stress that may substantially impact health. Secondly, education provides knowledge and skills, which in turn, increases opportunities for employment and access to healthier environments. Finally, employment provides not only money for financial stability, but also a sense of identity and social contact, all of which are conducive to good psychological and physical health (PHAC, 2011). Evidently, positive mental health is favourable for those of a higher socioeconomic status.
Further supporting a relationship between socioeconomic deprivation and mental health, Silver et al., (2002) found that neighbourhood disadvantage (e.g. public assistance income, unemployment, living below poverty line) is significantly related to higher rates of depression and substance abuse. Other studies indicate that violence among the mentally ill, and thus risk for police contact, is much higher for those individuals living in areas marked by poverty (Hiday, 2006; Silver, 2006). With regard to education, low educational level has been found to be associated with past year mental disorder diagnoses among Native American women (Duran, Sanders, Skipper, Waitzkin, Malco, Paine, & Yager, 2004).

It is also well established in the social ecology literature that areas marked by poverty are conducive to criminal activity (Shaw & McKay, 1969; Sampson & Groves, 1989). Moreover, a number of studies have established that level of education significantly reduces the likelihood of criminal activity among various populations (e.g. Lochner and Moretti, 2004; Machin, Marie & Vujic, 2012). This effect may be attributed to employability and the “increase in wages associated with schooling” (Lochner & Moretti, p. 183).

Owing to findings in the extant literature (i.e. socioeconomic deprivation is significantly related to mental health and criminality), this study sought to determine if measures of socioeconomic deprivation are related to rates of MHA calls in northern British Columbia. Based on the research summarized above, it was hypothesized that average family income and education would exhibit positive relationships with rates of MHA calls, while unemployment would demonstrate a negative relationship with rates of MHA calls. Consistent with these predictions, regression results indicated that regions of northern British Columbia with a high percentage of post-secondary educated people, and high average family income had fewer MHA calls. Unexpectedly, however, areas with high rates of unemployment also corresponded to fewer MHA calls.

It is worth noting that the protective effect of education was expected to be especially likely in northern British Columbia. This portion of the province houses the University of Northern British Columbia, suggesting that there is a large population of post-secondary educated persons. Thus, as evident from the regression results, DAs with a high percentage of the population with post-secondary education were found to have
fewer MHA calls. With regard to the unforeseen relationship between unemployment and rates of MHA calls perhaps the effect of unemployment is only significant in combination with additional stressors such as those associated with immigration (Kennedy & McDonald, 2006).

4.3. Considerations

4.3.1. Limitations of Ecological Data

When considering the results of this analysis it is important to acknowledge the inherent limitations of using ecological data. Firstly, one must keep in mind that, when units of aggregation are adjusted, the results of the analysis may be substantially altered. This concept has commonly been termed the modifiable areal unit problem (MAUP) and is “associated with several erroneous statistical effects that usually accompany the use of pre-packaged data, such as those derived from the census” (Openshaw, 1984 as cited in Bell, 2009, p. 170). The current analysis utilized dissemination area level data; however, if data were aggregated to smaller or larger units, the results may differ. It is also important to note that a dissemination area displaying more MHA calls or high levels of social disorganization does not necessarily indicate that all places within the DA display these rates or that these characteristics are more prevalent within that particular spatial area. This is termed the ecological fallacy and occurs when assumptions about an individual are made based on aggregate data from a group of individuals (Bell, 2009, p. 170).

4.3.2. Police Data

It is important to note that there are also limitations associated with the use of police data. There may be some variability in counts of MHA calls, as information entered into PIRS-BC is subject to officer discretion, data entry errors, and other factors that lead to missing information. For example, calls can sometimes be written off to the Computer Aided Dispatch (CAD) system and therefore would not appear in the PIRS system. Further, there is no way of verifying the accuracy of the information recorded and whether or not the MHA apprehension actually occurred. Longitudinally combining the data, as well
as local differences within northern British Columbia (e.g. health service availability, use of courts) could also have influenced the results of this analysis.

Given that the data used in this research only describes one type of event (i.e. MHA calls), future investigations should consider the written narratives that are affiliated with each of the events documented within police databases. Reading the narratives would provide additional context to the incident to ensure that counts are accurate.

4.3.3. Rural Social Disorganization

Very few studies address the application of social disorganization theory to rural environments, specifically in an attempt to explain mental-health-related phenomena. In the past, social ecology research, and in particular social disorganization theory, has limited its attention to one environment: densely populated urban centres (Osgoode & Chambers, 2000). Osgoode and Chambers (2000) were the first to systematically test the relevance of this theory to crime in non-metropolitan areas. Their investigation of rural youth violence in the United States indicates that juvenile arrest rates are significantly related to residential instability, family disruption, and ethnic heterogeneity.

While these findings suggest that social disorganization themes may successfully be applied to rural communities, Kaylen and Pridemore (2013) identify three crucial limitations of rural social disorganization and crime research: (1) inconsistent results, (2) reliance on official crime statistics, and (3) the failure to test the full model (p. 909). Further explaining the discrepancies in this context, they note that:

It may be that (1) the structural antecedents of disorganization are different in rural relative to urban areas or (2) social organization in rural areas is so strong that it moderates any direct effects of social structure on crime. (p. 909)

Branching from Kaylen and Pridmore’s (2013) second statement, the moderating effects of strong social organization may be partially attributed to high levels of collective efficacy within rural communities. Collective efficacy is “defined as social cohesion among neighbors combined with their willingness to intervene on behalf of the common good” (Sampson, Raudenbush, & Earls, 1997, p. 918). Specifically, research has found that
mutual trust and cohesion among residents is linked to reduced crime and positive mental health (Cohen, Inagami, & Finch, 2008; Freedman & Woods, 2013, p. 7). In communities where there are numerous characteristics of social disorganization (e.g. concentrated poverty), high collective efficacy can mediate the effects of these factors (Sampson et al., 1997).

In rural communities, there are often high levels of personal interaction that are conducive to building strong collective efficacy. Payne and colleagues (2005) suggest that the cooperation and citizen involvement that exists within small towns assist police in protecting the community. Moreover, close personal relationships with community members also provide police with the opportunity to informally resolve issues as an alternative to arrest or formal processing (Payne et al., 2005). Accordingly, high levels of community cohesion present in rural environments may therefore moderate the negative effects of some community characteristics on rates of MHA calls in northern British Columbia.

Comprehensively, while some studies support the successful applicability of social disorganization theory to crime in rural communities, generalized conclusions cannot be made. Even if consistently significant and largely effective results supporting a relationship between social disorganization and rural crime were to exist, these findings may not be pertinent to mental-health-related phenomena or northern specific regions.

In closing, the current chapter was an initial attempt to apply social disorganization theory to the explanation of mental-health-related phenomena in the context of rural northern environments. Despite highly significant results of the regression analysis, the actual impact of community characteristics on rates of MHA calls was minimal. However, a number of possible explanations were offered to account for the unexpected directional relationships exhibited in the findings. Based on this preliminary analysis, it seems as though social disorganization theory may not be the most appropriate theory for explaining mental-health-related police contacts in a rural northern context.

Overall, owing to the exploratory nature of this study, further research exploring the generalizability of social disorganization theory to rural northern environments is essential. In particular, future investigations should specifically address the relevance of
community context to explaining mental-health-related phenomena. As suggested by Kaylen and Pridemore (2013), it is also possible “that social disorganization theory does not generalize to rural communities and a new theory needs to be developed” (p. 909).
Chapter 5. Health Service Accessibility

Shifting slightly from the social ecological lens of the previous section, this chapter addresses the spatial relationship between mental-health-related police contacts and health service accessibility in rural northern British Columbia. Address locations of MHA calls and health service locations within the North have been mapped, and Euclidean distances between MHA calls and the nearest local health centre were calculated. Because police are required to bring an individual detained under the MHA to a physician for assessment (BCMH, 2005), distances to the nearest hospital, as well as MHA designated facility, were also recorded. Finally, LISA analysis identified numerous spatial clusters or ‘hot spots’ of MHA calls. Results and their implications are presented below.

5.1. Distance to Health Care Services

All data and results will be discussed, however for the purpose of clarity, this section pertains only to the location of MHA calls and their distance to health services. Apparent in the figures below, several observations can be made regarding the spatial distribution of MHA calls and health service locations in northern British Columbia: (1) MHA calls and health services are primarily concentrated in populated areas near major road networks, (2) MHA calls are generally located in close proximity to health services, (3) health services are widely dispersed throughout northern British Columbia, and (4) there is substantial variation in the distance of MHA calls to the nearest health service location.
Figure 5.1  Spatial Distribution of RCMP Mental Health Act Calls, Northern British Columbia
Figure 5.2  Health Service Locations, Northern British Columbia
Figure 5.3  Mental Health Act Calls and Designated Facilities, Northern British Columbia
Euclidean distances from the location of MHA calls to the nearest health service in northern British Columbia can be seen in Table 5.1. Average, minimum, and maximum distances have been included for general health services, hospitals, and MHA designated facilities. Table 5.2 presents information pertaining to MHA call counts and distances in designated facility catchment areas.

**Table 5.1  Descriptive statistics for distance of MHA calls to the nearest health service**

<table>
<thead>
<tr>
<th></th>
<th>Average</th>
<th>Maximum</th>
<th>Minimum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nearest Hospital</td>
<td>7.6</td>
<td>461.0</td>
<td>0.007</td>
</tr>
<tr>
<td>Nearest Health Centre</td>
<td>3.1</td>
<td>71.1</td>
<td>0.007</td>
</tr>
<tr>
<td>Nearest Designated Facility</td>
<td>74.9</td>
<td>622.2</td>
<td>0.021</td>
</tr>
</tbody>
</table>

Note. Distances are in kilometers; N = 7413 (MHA calls)

**Table 5.2  Designated facility catchment areas: Distances and MHA call counts**

<table>
<thead>
<tr>
<th></th>
<th>Prince Rupert Regional</th>
<th>Mills Memorial Terrace</th>
<th>Prince George Regional</th>
<th>Dawson Creek and District</th>
<th>Fort St. John General</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average</td>
<td>129.5</td>
<td>81.5</td>
<td>72.0</td>
<td>9.6</td>
<td>181.4</td>
</tr>
<tr>
<td>Minimum</td>
<td>3.3</td>
<td>0.021</td>
<td>0.123</td>
<td>0.093</td>
<td>6.2</td>
</tr>
<tr>
<td>Maximum</td>
<td>622.2</td>
<td>446.7</td>
<td>295.4</td>
<td>85.1</td>
<td>314.9</td>
</tr>
<tr>
<td>MHA Calls</td>
<td>118</td>
<td>2069</td>
<td>4389</td>
<td>561</td>
<td>276</td>
</tr>
</tbody>
</table>

Note. Distances are in kilometers; N = 7413 (MHA calls)

### 5.2. Local Indicators of Spatial Association

The output of the LISA analysis placed spatial units in only one category; statistically significant ($p < 0.05$) high-high cluster forms where areas with high rates of MHA calls are surrounded by areas with high rates of MHA calls. Although dissemination area units cover a large proportion of landmass, LISA results indicated that events are primarily concentrated in major centres in the North. Specifically, within the 662 dissemination areas, 27 clusters were identified, all of which were located within six municipalities: Prince George, Terrace, Kitimat, Bella Bella, Quesnel, and Williams Lake (see Figure 5.5). After further investigation it was determined that these clusters were in
close proximity to major hospitals. In Prince George, clusters were also nearby Forensic Psychiatric Services. Major centres and nearby hospitals are documented in Table 5.3.
Figure 5.4  LISA Classifications by Major Centre, Northern British Columbia
Table 5.3  LISA Clusters

<table>
<thead>
<tr>
<th>Major Centre</th>
<th>Type</th>
<th>Population 2006</th>
<th>Local Hospital</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prince George City</td>
<td>City</td>
<td>70,981</td>
<td>Prince George Regional</td>
</tr>
<tr>
<td>Terrace City</td>
<td>City</td>
<td>11,320</td>
<td>Mills Memorial</td>
</tr>
<tr>
<td>Kitimat District Municipality</td>
<td>District Municipality</td>
<td>8,987</td>
<td>Kitimat General</td>
</tr>
<tr>
<td>Bella Bella Indian Reserve</td>
<td>Indian Reserve</td>
<td>1,066</td>
<td>R. M. Large Memorial</td>
</tr>
<tr>
<td>Quesnel City</td>
<td>City</td>
<td>9,326</td>
<td>G. R. Baker Memorial</td>
</tr>
<tr>
<td>Williams Lake City</td>
<td>City</td>
<td>10,744</td>
<td>Cariboo Memorial</td>
</tr>
</tbody>
</table>

Note. Population information retrieved from Statistics Canada (2006b)

5.3. Discussion

According to the Canada Health Act (1985), the Parliament of Canada recognizes that “continued access to quality health care without financial or other barriers will be critical to maintaining and improving the health and well-being of Canadians” (p. 1). In other words, pragmatic accessibility (both physically and financially) is a fundamental aspect of adequate health care provision in Canada. According to research conducted by Hunter (2006), various stakeholders (e.g. RCMP, social workers, school principals) in northern British Columbia consistently identify mental health care as the most underserviced aspect of professional health care in non-urban areas of the province (Hunter, 2006, p. 174). Seemingly, accessibility criteria, and thus appropriate health care provision as determined by the Canada Health Act (1985), is not available for individuals residing in these areas.

The results from this chapter provide detailed insight to the health service accessibility issues that exist in northern British Columbia and the potential ramifications this may have for police officers responding to mental health emergencies in this region. Findings, and their implications are discussed in the following sections of this chapter.

5.3.1. How Far is Too Far?

Generally, maps and descriptive statistics indicated that health care services within northern British Columbia are widely dispersed throughout the province and accessibility, particularly in the event of a mental health emergency, is extremely varied. As seen in
Table 5.1, the average distance to a hospital is 7.6km; however, there is a substantial difference in minimum and maximum distances (i.e. 0.007km and 461km respectively). Consistent with past research, these values suggest that, in rural or northern areas, resources are spread thin and police may have long distances to travel to the nearest health centre (Cotton & Coleman, 2010; Herrington, 2012; OMHAKEN, 2009).

As previously outlined:

Where a police officer takes a person into custody under section 28(1) the police officer must immediately take the person to a physician for examination. Usually, the police will take the person to a hospital rather than to a physician in the community. The physician then applies the involuntary admission criteria and, if the criteria are met, fills out a Medical Certificate. This certificate is legal authority for the officer to take the person to a designated facility and for the admission of the person for examination and psychiatric treatment for up to 48 hours. (BCMH, 2005, p. 12)

Based on descriptive findings, it is evident that, despite variation, in some cases a MHA incident may occur within a reasonable distance to a hospital and police may not have to travel too far to find a physician. However, it is important to note that not all of the hospitals in northern British Columbia are designated facilities under the Mental Health Act. According to British Columbia’s Mental Health Act, an individual can only be admitted involuntarily under the Act to facilities designated by the Minister of Health (BCMH, 2005).

Overall, there are only five designated inpatient psychiatric units in northern British Columbia:

- Mills Memorial Hospital, Terrace
- Prince George Regional Hospital, Prince George
- Dawson Creek and District Hospital, Dawson Creek
- Fort St. John General Hospital, Fort St. John
- Prince Rupert Regional Hospital, Prince Rupert

Additionally, there are two designated inpatient observation units: Wrinch Memorial Hospital, Hazelton, and Fort Nelson General Hospital, Fort Nelson. “Observation units are short stay units in small hospitals where the person is stabilized within a few days and, if continuing inpatient treatment is necessary, transferred” (BCMH, 2005, p. 2). All other
facilities, even with the presence of a licensed physician, are considered ‘non-designated.’ The Act outlines that a non-designated facility should only care for a patient while they are ‘in transit’ to a designated facility; however, it is preferable that an individual is held in a non-designated facility until transfer rather than a jail cell (BCMH, 2005).

To summarize, individuals apprehended under section 28 of the MHA are brought by police to a physician and if deemed necessary, involuntarily admitted to a designated facility. This information suggests that, even if police initially take an individual to a non-designated facility for examination, in some instances, upon receipt of the medical certificate, the officer may still be required to transport them to a designated facility. Occasionally, the physician may approve an alternative authority (e.g. paramedic, family member) to transport the individual (BCMH, 2005). However, in the case that police are required take the individual to the nearest designated facility, distances may be much farther than the nearest hospital; particularly in the North where landmass is large and designated facilities are few. Specifically, results indicated that there is a considerable gap between the average distance to a designated facility (74.9km), and the average distance to the nearest hospital or general health service facility (7.6km and 3.1km respectively).

The process of transporting individuals to the appropriate facility would, therefore, take up valuable police time and resources and may have a substantial impact in rural communities where police services are in high demand (Payne, et al., 2005 p. 38; Weisheit et al., 1994; Wood & Trostle, 1997). As conveyed by Lurgio, Smith, and Harris (2008): “from a time management perspective, delays in accessing care dilute patrol strength and also lead to significant overtime expenses for officers or transfers of custody during shift changes” (p. 302). Highlighting the severity of access issues, Hunter (2006), a psychotherapist from Dease Lake, northern BC, remarks that for her, the nearest psychiatric unit is in Terrace, almost an 8-hour drive away (Hunter, 2006).

In addition to travel time, long hospital wait times can also consume valuable police time and resources (Green, 1997; Wells & Shafer, 2006). Although there is no specific instruction in the Mental Health Act stating when police can leave after bringing an individual to hospital for examination, the police have interpreted the legislation as requiring that they must retain custody of the individual until examination by the physician.
is complete. This is in case assistance is needed throughout the duration of the wait period (BCMH, 2005). A review of multiple studies conducted in Ontario indicates that police in both urban and rural settings experience excessive hospital wait times that may be attributed to a lack of available hospital beds (OMHAKEN, 2009, p. 6).

Considering the long travel distances and emergency room wait times in northern and rural environments, officers sometimes decide to arrest an individual with mental illness rather than seek emergency psychiatric admission for that person (Lurgio et al., 2008, p. 302). Unfortunately, this practice largely contributes to the criminalization of persons living with mental illness in rural areas. One rural study found that 60% of individuals with severe mental health issues are held in jail without criminal charges (Sullivan & Spritzer, 1997). When hospital beds, access to mental health services, or transportation to hospitals are not immediately available, SAMI individuals are detained in jails without criminal charges and without appropriate treatment (Sullivan & Spritzer, 1997). These issues may be even more prevalent with the addition of a ‘northern’ component.

Additional considerations in northern British Columbia may further exacerbate the issues associated with patient transport and health service accessibility. For example, fly in/boat in communities lack designated facilities, and harsh winter weather (e.g. snow and rain) may impact road conditions (see Table 3.2 for northern BC climate information). Furthermore, the Euclidean distances of the reported results do not account for physical terrain barriers (e.g. mountains) or road networks; thus, traveled distances may actually be much further than those conveyed in these findings.

Despite the specialized concerns that exist in northern British Columbia, the Mental Health Act provides no specific protocol regarding mental-health-related emergencies in rural or remote areas (BCMH, 2005, p.18). Evidently, transportation to a designated facility is not always possible in these contexts and additional steps are needed to sufficiently address such incidents. While the Mental Health Act encourages rural and northern communities to develop local protocols, specific guidelines are imperative to ensure that adequate care is being provided.
5.3.2. Distance Decay

Health service accessibility may not only directly impact police MHA apprehensions; it is also possible that individuals who reside far from a health service may refrain from seeking help until the mental health issue has reached crisis status and police intervention is required. This can be explained by the concept of ‘distance decay’; a phenomenon occurring in rural communities where there is a lower rate of service use with increasing distance from these services (Wong & Regan, 2009). Distance decay can be attributed to environmentally specific obstacles such as long travel times, transportation issues, and limited social networks in rural northern areas (Commission for Rural Communities, 2008; Wong & Regan, 2009). In light of these circumstances, people living in rural areas far from health services are unlikely to receive early intervention for medical or mental health needs (Wong & Regan, 2009). Consequently, “poor primary health care, reduced access to care, and fewer resources increase avoidable hospitalization rates” (p.7). In the context of this thesis, distance decay in rural northern regions of British Columbia may indirectly contribute to hospitalizations that occur via police MHA apprehensions.

Wong and Regan’s (2009) qualitative exploration of patient perspectives on access to primary health care in rural British Columbia provides some insight to the specific barriers that exist in these regions of the province. Seven focus groups were conducted in six rural communities (N = 50) with populations ranging from 5,206 to 40,879. Focus group participants discussed the implications associated with a lack of “mental health, home care, physical therapy, and secondary care” services available in their home communities. Often, participants would have to drive long distances to a regional centre such as Prince George to meet healthcare needs. Health care interventions were further compromised by the cost of gas money for travel, time taken away from worker productivity, and hazardous driving conditions due to seasonal weather (p. 6). According to participants, many people in these communities cannot afford the trade-off between “acquiring needed health services and out-of-pocket costs” (p.6).

In sum, if lengthy distances and limited accessibility to health services are preventing individuals with mental health issues from seeking early intervention (and thus contributing to MHA calls) it may be advantageous to make improvements to the local
public transit systems (Wong & Regan, 2009). Enhanced transportation services for residents would thereby improve accessibility to mental health care services, permit early intervention, and thus minimize the likelihood of future police involvement.

5.3.3. MHA Hot Spots

From the LISA analysis, a number of MHA call ‘hot spots’ in northern British Columbia were identified. Notably, all of the classified clusters were encompassed within six largely populated centres in the North: Prince George, Terrace, Kitimat, Bella Bella, Quesnel, and Williams Lake. Hot spot locations supplement previously discussed regression results that indicate a higher population is significantly related to higher rates of MHA calls (see p. 43).

After further investigation, it was determined that each of these major centres housed hospitals. Prince George specifically, also included Forensic Psychiatric Services. Notably, however, only two of these hospitals were MHA designated facilities: Mills Memorial Hospital, Terrace, and Prince George Regional Hospital, Prince George. Comprehensively, the patterns of the LISA analysis convey that MHA calls tend to concentrate in highly populated areas, in close proximity to major health centres.

It is certainly possible that the clustering of calls near health services may solely be related to the fact that services are located in populated centres. However, one study conducted by Melnychuk et al. (2009) found that after release, forensic patients in the Lower Mainland of British Columbia notably clustered near two of the major forensic health facilities. Clustering may also indicate that these individuals had no family-based alternatives and moved into subsidized housing or cheaper accommodation that exists in socially disorganized areas.

Other research by Moseley, Shen, and Cochran (2008) investigated the association between mental health service availability and emergency department admissions of SAMI individuals. They found that areas with fewer core mental health professionals, combined with a high need for mental health services, led to more emergency department hospital admissions. Interestingly however, the availability of
community mental health centers actually contributed to more emergency department admissions.

Presumably, forensic patients have had previous police contact, and emergency department admissions of SAMI individuals often occur via police MHA apprehension. Thus, the findings from these studies suggest that mental-health-related police contacts may be more likely in areas with more, or in close proximity to, health services. While the reasoning behind these results are unclear, based on the spatial patterns demonstrated in northern British Columbia, it would seem that health service availability may be related to the concentration of MHA calls. Prospective research should further explore the spatial distribution of MHA calls in northern rural environments.

5.4. Considerations

5.4.1. Limitations

While this analysis has provided important insight to health care accessibility in northern British Columbia, a number of potential limitations need to be addressed. Firstly, as discussed previously, there are inherent limitations associated with the use of both ecological (see Section 4.3.1) and police data (see Section 4.3.2), and owing to missing information, the mapped results may not fully represent true spatial patterns (see Section 3.4).

Secondly, because health service information was retrieved from an external source, it is impossible to verify the accuracy and completeness of the dataset. Furthermore, as the dataset is from 2005, it is possible that there has been a change in health services within the last 10 years. Accordingly, future research should consider utilizing a more recent dataset.

It is also important to consider the ambiguity of British Columbia’s Mental Health Act. While it is likely that police bring an MHA-apprehended individual to the nearest hospital or designated facility, it is impossible to determine which facility police actually utilize since there is no established protocol for rural and remote regions of the province.
Police discretion and local differences also make it difficult to determine the exact process that occurs for each MHA apprehension. There is an abundance of considerations that exist in northern rural environments that may impact this process (e.g. weather, road conditions, distance, time).

Lastly, Euclidean distances of the reported results do not account for road networks or the geographic diversity of British Columbia. Therefore, distances may actually be much farther than those conveyed in these findings. Accordingly, future investigations should account for these factors in order to determine precise distances to health care facilities.
Chapter 6. Conclusions

This thesis explored mental-health-related police contacts in the context of rural northern environments. Specifically, the first phase of this study addressed the relationship between community characteristics and rates of MHA calls in northern British Columbia. Findings from the regression analysis were inconclusive; however, this was the first known application of an urban ecological theory to the explanation of mental health phenomena in rural northern environments. Thus, while preliminary in nature, findings from this research provide a solid groundwork for future investigation into this field.

The second phase of this study examined the spatial distribution of MHA calls and local health care facilities. Results indicated that MHA calls were primarily concentrated in populated centres near major road networks in the north. More importantly, however, findings demonstrated that the distance between MHA calls and the nearest health centre varied substantially. Although, on average, general health care centres were nearby, MHA designated facilities necessary for involuntary commitment were often extremely far away.

Based on the current findings, it is evident that access to designated facilities required for the involuntary commitment of MHA-apprehended individuals, is extremely limited in northern British Columbia. In addition to far travel distances, long hospital wait times and poor weather may further impede police resources and adversely impact police response to MHA calls. These findings are consistent with past research regarding health service accessibility in northern rural communities (Landau, 1996; Payne, et al., 2005; Weisheit, et al. 1994). This “difficulty of geographic access” (Wood & Trostle, 1997, p. 378) and need for services, generates various obstacles for police and influences the quality of care received by SAMI individuals residing in these environments.

6.1. Policy Recommendations

The apparent consequences associated with limited health care accessibility in northern British Columbia highlight an immense need for equitable spatial access to facilities across the province. While the implementation of additional health care facilities
may not be feasible in the short-term due to infrastructural costs (buildings, staff, resources, etc.), in light of the findings of this thesis, there are a number of recommendations that may be offered to mediate the negative effects of this issue.

6.1.1. MHA Provisions

In 2005, the British Columbia Ministry of Health acknowledged the lack of provisions regarding rural and remote regions of the province as a large limitation of the Act. Despite this recognition, in the past 10 years, little has been done to address this issue. Thus, owing to this limitation, the British Columbia Mental Health Act should outline specific protocols for responding to mental-health-related emergencies in rural and remote areas of the province. Although events are unpredictable, the implementation of such guidelines would provide a foundational basis to ensure protection of the client and consistency of police work.

For example, Queensland Mental Health Act (2000) provisions specify “if there is no authorised mental health service in a rural or remote area of the State, the person may be assessed at a public hospital in the area” (p. 40). Transport to the nearest hospital, rather than an authorized mental health service, may considerably reduce transport times and conserve police resources. Arguably, non-designated facilities may not be adequately equipped to handle psychiatric assessments; however, the implementation of telehealth initiatives may be beneficial for the use of such protocol. Telehealth initiatives and their potential implications for police response to mental-health-related emergencies in northern British Columbia are discussed in detail in the following section.

6.1.2. Telehealth for Mental Health

According to the British Columbia Provincial Health Services Authority (PHSA, 2015), “telehealth is the use of live videoconferencing over a secure high-speed provincial network to facilitate clinical consultations, continuing professional education, and administrative collaboration.” These services are “particularly effective in remote and underserviced areas” (PHSA, 2015). Comprehensively, the literature regarding telehealth for mental health (telemental health) and substance use indicates that these programs
have many advantages: (1) enhances diagnosis, treatment, and follow-up care, (2) saves unnecessary travel time and transportation costs, (3) addresses the gap in service and extends access to emergency mental health care in rural and remote areas, and (4) encourages collaborative partnerships with specialists, thereby furthering education and enhancing patient care (Kinley, Zibrick, Cordeiro, Lauscher, & Ho, 2012). Furthermore, “it has been suggested that access to telemedicine may improve recruitment and retention by connecting otherwise isolated professionals to their peers” (CMHA, 2009, p. 6).

Within British Columbia, specialists are able to correspond with 117 remote and distant communities across the province and in the Yukon. Specifically within the Northern Health Authority, telehealth services have been implemented in 28 different locations (PHSA, 2015). Although available, there is a shortage of information regarding the use and success of telehealth initiatives for mental-health-related emergencies in northern British Columbia. However, the use of telehealth for psychiatric and mental health care in this region may have a number of benefits for hospitals, police, and the community as a whole.

**Police Transport**

As previously noted, permitting police to transport an MHA-apprehended individual to the nearest local hospital, rather than a designated facility, may considerably reduce transport times and conserve police resources. Although some local hospitals may not be fully equipped to handle mental-health-emergencies, the use of telehealth programs would permit personnel at these centres to communicate with specialized units to assess and create appropriate treatment plans for the individual in crisis. Collaboration of this nature would likely ensure the availability of specialized care while simultaneously reducing the necessity for the police to transfer the patient to a distant designated facility.

**Mental Health Nurses: Expanded Practice**

The implementation of telemental health services may also enable nurses to prescribe medication after long-distance communication with physicians/psychiatrists, thus reducing long emergency room wait times for police. Notably however, qualitative research in New South Wales exploring mental health nurse perceptions of prescribing authority, found that many participants were in support of a limited authority to prescribe
medications specifically used to treat mental illness without physician consultation (McCann & Baker, 2002). They expressed that with the appropriate qualifications, this authority was within their scope of practice and could substantially reduce or avoid delays waiting for doctors. In rural and remote areas in particular, this would substantially save time and resources for both police and health care personnel.

**Community Access and Specialized Care**

As addressed in Section 5.3.2., research suggests that as the distance from health services increases, the use of these services substantially decreases (Wong & Regan, 2009). This concept of ‘distance decay’ may be attributed to unique factors that exist in northern, rural, or remote contexts (e.g. long travel times, transportation issues) (Commission for Rural Communities, 2008; Wong & Regan, 2009). Thus, people residing far from health services are unlikely to seek early intervention for medical or mental health needs (Wong & Regan, 2009). Through the implementation of psychiatric telehealth services, community residents would be able to receive access to specialized care at nearby health centres without having to travel unreasonably far. Feasible access might also increase the likelihood of an individual seeking treatment in the first place and prevent mental health issues from escalating to the point of police intervention. Moreover, appropriate follow-up care through these services may reduce the likelihood of future repeat encounters with the police.

**Existing Initiatives**

As a starting point for telemental health service implementation, northern British Columbia should look to initiatives such as the Mental Health Emergency Care- Rural Access Program (MHEC-RAP) in New South Wales, Australia. The MHEC-RAP was implemented in 2008 “to improve access to specialized emergency mental health care, safety and service coordination, and patient outcomes” and is the first of its kind to provide 24-hour access to a regional team of mental health specialists (Saurman, Kirby, & Lyle, 2015, p. 2). A number of benefits of this program were identified through interviews with emergency mental health care providers: (1) providers “did not have to send patients to another facility or wait for a specialist to arrive to get assistance or have a patient assessed” (p. 6), (2) patients could be left with a provider over videoconferencing, permitting staff to attend to other patients, and (3) patients were seen much more quickly,
thus reducing waiting times and the potential for aggression, agitation, or escalation of symptoms.

Canadian programs, such as the University of Toronto’s (2015) Northern Psychiatric Outreach Program (NPOP-C) may also provide useful guidelines for mental health care in rural, remote, and underserviced communities in northern British Columbia. Since 1993, NPOP-C has been providing clinical consultations and educational services via telehealth videoconferencing technology. In addition to serving dozens of communities throughout northern Ontario, this program also provides outreach and monthly psychiatric consultation visits to Baffin Island in Nunavut.

Information regarding psychiatry outreach initiatives in rural British Columbia is limited; however, there have been various educational and financial incentive programs established in the province that are aimed at generally enhancing the “availability and stability of physician services in rural and remote areas of British Columbia” (British Columbia Medical Association, 2012). These programs are available to registered physicians, medical students, and postgraduate residents working in rural communities within the province. Although psychiatrists are eligible for travel funding to provide services in rural communities, it is unclear how frequently these programs finance this specialty. Moreover, the rate of use and effectiveness of mental health services provided by these physicians is unknown. Accordingly, future research should explore the use of these programs for mental health services so that appropriate modifications can be made to enhance psychiatric care in northern regions of the province.

Overall, owing to enhanced service access, specialized treatment, and collaboration between health care providers, it is evident that the implementation of telehealth services within local hospitals may substantially improve police response to mental-health-related emergencies in northern British Columbia. It is important to acknowledge there are operational and infrastructural costs of implementing telehealth videoconferencing technology in remote contexts (e.g. increased bandwidth) (CMHA, 2009; Toperczer, 2011, as cited in Kinley et al., 2012). Thus, adequate funding is necessary for the effective and successful operation of these programs.
6.1.3. **Interagency Cooperation**

Arguably both police and mental health services are highly reliant on each other and cannot effectively respond to mental health emergencies independently (O’Brien & Thom, 2014). Moreover, Livingston et al. (2008) note that interagency cooperation is the most significant factor for the successful diversion of individuals with mental illness away from the criminal justice system.

Owing to the scarcity of health services in northern British Columbia, joint collaboration between police and health professionals is especially important. Past research indicates that cooperation among police and health agencies provides improved assistance for vulnerable citizens, which in turn prevents crime and follow up cases. Furthermore, the cooperation between sectors better facilitates feedback, coordination, and information exchange (Sestoft, et al., 2014). Livingston and colleagues (2008) recommend that: “local and regional networks with representation across different sectors should be formed to examine and resolve barriers to services at the interface of the mental health and criminal justice systems” (p. 8). Such committees would ensure that the best available resources are deployed across jurisdictional boundaries.

Northern British Columbia could also substantially benefit from collaborative programs similar to Car 67 and Car 87 in the Lower Mainland. “A joint service of the Vancouver Police Department and Vancouver Coastal Health, Mental Health Emergency Services (Car 87) is a crisis response and emergency service that responds to calls involving people with apparent mental illness or in acute distress” (Vancouver Coastal Health, 2013). Similarly, Car 67 is a partnership between the RCMP and Fraser Health Authority that “provides on-site emotional and mental health assessments, crisis intervention and referrals to appropriate services” (RCMP, 2015). Specifically, in both of these programs, a registered nurse or psychiatric nurse rides along with an on duty police officer and assists in responding to mental health calls. In combination, the knowledge of both the police officer and the nurse ensures a highly effective response. If implemented in northern regions of the province, partnership programs such as these could prevent unnecessary travel to far away health facilities and ensure that the most appropriate course of action is taken.
6.1.4. Policing Strategies

The historical role of law enforcement in the assimilation of Aboriginal peoples in Canada (e.g. residential school placements, enforcement of the pass system) has understandably resulted in a strong distrust of police among this population (Chrismas, 2012; Jones, Ruddell, Nestor, Quinn, & Phillips, 2014). In addition, research indicates that there is a general “lack of understanding of and sensitivity to Aboriginal culture by non-Aboriginal police officers” (Lithopoulos & Ruddell, 2013 as cited in Jones et al., 2014, p. 6). However, in the past, policing services to First Nation communities have primarily been provided by non-Aboriginal officers. Owing to the large population of Aboriginal persons in northern British Columbia, combined with high rates of mental illness among these individuals, it is particularly important to consider the unique needs of this population in police response to mental-health-related emergencies.

First Nations Policing Program

Issues surrounding policing Aboriginal communities, such as inadequate police presence, lack of clear policies and regulation of services, poor response times, and insufficient funding, prompted a reform of Canadian policing practices (Jones, et al., 2014, p. 6). Accordingly, in 1992 the First Nations Policing Program was established.

“The First Nations Policing Program (FNPP) is intended to provide First Nation and Inuit communities with access to police services that are professional, effective, culturally appropriate and accountable, without prejudice to the provinces or territories that are responsible for policing their respective jurisdictions” (Public Safety Canada, 2010, p. ii). In British Columbia, under the FNPP, the RCMP provides policing services through a number of First Nations police officers working within the organization (RCMP, 2012b). Specifically in 2014, the RCMP’s “First Nations Community Policing Service (FNCPS), had an authorized strength of 108.5 officers to provide enhanced policing services to approximately 130 First Nation communities in B.C. through 55 Community Tripartite Agreements” (Government of British Columbia, 2015).

Despite the extensive period of time since its implementation, limited research has explored best practices for Aboriginal policing and the effectiveness of the FNPP (Jones, et al., 2014). Notwithstanding, the underlying principles of this program are an important
step forward and services such as the FNCPS should be further utilized within northern British Columbia to provide policing services to, and foster positive relationships with, the Aboriginal community. Through respect, sensitivity to cultural beliefs, equitable service provision, and the inclusion of Aboriginal peoples in policing practices, officers can establish trust within the community, build understanding, and improve Indigenous-police relations. Cultural inclusion and bilateral understanding is a critical component of effective communication in policing. The presence of an Aboriginal police officer would likely reduce the number of negative interactions between the police and Aboriginal communities. This would likely extend to the context of police response to mental-health-related crises. The interaction of Aboriginal police officers with Aboriginal mental health clients in a policing context would undoubtedly provide an increased comfort level and feeling of mutual understanding and cooperation.

**Specialized Police Training**

Lastly, specialized training may also enhance police response to mental-health-related emergencies in the North. Specifically, the implementation of specialized response models such as the Memphis Crisis Intervention Team (CIT) may improve officers’ understanding of mental illness and the effects of mental illness on an individual’s behaviour (Reuland, et al., 2009). Although there are barriers to the implementation of mental health police training in rural environments, research has indicated that there are still many aspects that markedly enhance the effectiveness of police response to SAMI (Skubby et al., 2013). Accordingly, training programs should consider rural or northern specific characteristics so that training approaches may be specifically tailored to individual community needs.

**6.2. Future Directions**

In light of the findings of the current study, it is evident that future research is needed to gain a comprehensive understanding of policing, health service accessibility, and mental-health-related emergencies in the North. Moving forward, future collection of qualitative data exploring police use of the Mental Health Act in northern British Columbia may provide context to the current findings and offer insight to the challenges that exist in
this region. Specifically, conducting interviews with both police officers and health care personnel could provide useful implications for future policing practices and successful collaboration between agencies in this environment.

In addition, the effectiveness of Aboriginal policing programs, current use of telehealth services for psychiatric care, and overall best practices for police response to mental-health-emergencies in northern and rural contexts should be explored.

6.3. Final Remarks

Mental illness is an omnipresent social problem in our society. Its impact is compounded in rural northern communities by the very nature of their small size and limited infrastructures. The pervasive effect of mental health issues in these contexts is detrimental to patients, families, communities, health services, and to the police. Addressing the issue of mental health and its associated impact requires a collaborative multi-agency approach. The cooperation of multiple stakeholders is required to define and implement an effective and lasting solution.
References


