MENTAL HEALTH DIVERSION FROM HOSPITAL EMERGENCY DEPARTMENTS: ASSESSING A JOINT EFFORT OF TWO MENTAL HEALTH METHODS AND POLICE PARTNERSHIPS

by

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Mental Health Diversion from Hospital Emergency Departments: Examining the Effectiveness of a Joint Effort of Two Mental Health and Police Partnerships.

Purpose

The purpose of this research was to examine both individual and joint efforts in mental health collaboration and how individual and group initiatives can lead to decreased emergency department (ED) presentations and improved client care. Local and international literature is presented as a way to inform, advise, or hypothesize about known gaps in literature.

Method

Secondary data from the 2016 calendar year was accessed through Alberta Health Services (AHS). All Mental Health Act apprehensions that occurred in the City of Edmonton during the 2016 calendar year comprise the secondary data. Data surrounding Mental Health calls for service for both Urgent Services, the Police and Crisis Team, and the Edmonton Police Service was captured and analyzed with a chi-square analysis, with a focus on the call disposition.

Results

Research findings indicated the presence of a mental health clinician through either a Knoxville or Separate Response Model influenced person/people with mental illness (PMI) being admitted to hospital post mental health apprehension. PMI brought to an emergency department via a mental health act apprehension without a mental health clinician were more likely to be discharged. An informal partnership (Separate Response Model) was more successful than a formal partnership (Knoxville Model) in diverting PMI away from hospital. Regardless of substance use, there was no difference in disposition between substance and non-substance related mental health apprehensions.

Findings from this research indicate mental health and police collaboration improves client care through timely access to appropriate care.

Keywords: *schizophrenia, first-responder, psychiatric nurse, mental health, mental illness, addictions, bizarre behavior, suicidal, police, collaboration, Crisis Intervention Team, Knoxville Model, Birmingham Model, crisis negotiation, Canada.*

Lay Summary

Secondary data available from Alberta Health Services (AHS) was analyzed to determine the difference in outcome between the presence of, and the absence of mental health involvement at the time of a mental health crisis. The involvement of a mental health clinician at the time of crisis had an effect on diverting the person away from the emergency department, to safe and effective community resources. Client outcomes between two different mental health and police collaborative models were examined. An informal mental health and police partnership was more successful in diverting clients away from the emergency department than was a formal mental health and police partnership. Data was reviewed and analyzed to determine if there was an outcome difference between substance related and non-substance related Mental Health Act apprehensions. The presence of substance use at the time of a Mental Health Act apprehension did not affect whether or not the client was admitted to the hospital.

Preface

This document is based on research conducted by Peter Vermeulen who was responsible for reviewing the literature, designing the project, ensuring ethics approval, obtaining secondary data from Alberta Health Services, and analysis and interpretation of findings.

The thesis committee was comprised of Dr. Penny Tryphonopoulos, Dr. Nora Ahmad, and Dr. Brian Larson, without whom this project would not have been possible. Although not a thesis committee member, Cheryl Chorney provided exceptional guidance and support.

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Abbreviations Used

AHS:	Alberta Health Services
ALS:	Active Listening Skills
AMH:	Addictions and Mental Health
CIT:	Crisis Intervention Team
CRHT:	Crisis Resolution and Home Treatment
ED:	Emergency Department
EPS:	Edmonton Police Service
ICMS:	Integrated Mobile Crisis Service
MCRRT:	Mobile Crisis Rapid Response Team
MHAA:	Mental Health Act Apprehension (e.g. Form 10)
MHIST:	Mental Health Investigative Support Team
PACER:	Police Ambulance Crisis Emergency Response
PACT:	Police and Crisis Team
PMI:	People/Person with Mental Illness
RAM:	Ride-Along Model
RCMP:	Royal Canadian Mounted Police
SMART:	System-wide Mental Assessment Response Team
TASER:	Thomas A. Swift's Electric Rifle (e.g. less lethal electronic weapon)
US:	Urgent Services

Dedication

My father survived World War II and came to Canada in 1967 at the age of 30, being able to speak limited English. Through determination, German efficiency, and unparalleled stubbornness, he taught himself university-level math from an English textbook. In doing so, he was able to successfully challenge the first-year of the Engineering program at the University of Alberta and made a good life, providing for our family of five. Dad passed away unexpectedly in 2019, prior to the completion of this thesis. He was a great man and I miss him every single day.

My son Will was born in 2017 during the writing of this thesis. His little body was broken and he left us the same day he arrived. Will never got to meet his older sister Nora, who fills my days with unequivocal joy and happiness. Will's little sister Estelle was born two years after him. Estelle's curiosity of the world around her continues to amaze me each and every day. There is never enough time to spend with your kids. I look forward to watching them grow.

In 2012, an amazingly brilliant and beautiful nurse took a chance and decided to go out for "donuts and beer" with me. Nearly eight years later, I wake up every morning as the happiest man alive. Michaela has continuously pushed, supported, and encouraged me at every step of this graduate program whilst completing and defending her own thesis. Without her unconditional love, this research could have not been completed. She still gives me butterflies.

Chapter 1 – Introduction

1.1 Research Problem

Mental health training for police is often a recurrent issue in the Canadian media. As first-responders to calls for service involving persons with mental illness (PMI), police act as ad hoc gatekeepers for mental health services (Canada, Angell, & Watson, 2012). Mental illness can present to police in the form of unfounded complaints, bizarre or suicidal behaviors, or frank psychosis. Police calls for service involving PMI are twice as long compared to non-PMI related calls (Charette, Crocker, & Billette, 2011). The topic of mental health training can arise following a fatal interaction between police and PMI. Prior to 1988, there was no formal, structured collaboration between police and mental health providers (Dupont & Cochran, 2000). Following a fatal encounter between police and a person with schizophrenia, the Crisis Intervention Team (CIT) model of mental health and police collaboration was created (Borum et. al., 1998). Despite being the first developed model of mental health and police collaboration, the CIT model does not include the presence of a mental health clinician at the time of crisis (Borum et. al., 1998; Dupont & Cochran, 2000). Though common in the United States, CIT is not prevalent in the Canadian setting (Coleman & Cotton, 2010). Publicly funded Canadian and privately funded American healthcare systems are fundamentally different, enabling greater access to mental health and police collaboration in a Canadian setting.

This research examined the effectiveness of police accessing a mental health crisis service through collaboration between a Knoxville Model collaborative team (see Appendix A) and a Separate Response Model (see Appendix A) of mental health intervention.

The effectiveness of a Knoxville Model and a Separate Response Model in diverting PMI away from the emergency department (ED) will be compared to the effectiveness of a police-only approach. The effectiveness of diverting PMI from the ED by a Knoxville Model will be compared to the effectiveness of a Separate Response Model. Lastly, inpatient admission rates following a Mental Health Act apprehension (MHAA) for individuals apprehended due to substance-related concerns will be compared to a non-substance related apprehension.

It is hypothesized that the presence of a mental health clinician via either the Knoxville Model or Separate Response Model, at the time of mental health crisis, will result in PMI being diverted from the ED to safe and effective community services. It is hypothesized that a formal mental health and police partnership (e.g. Knoxville Model) will have a greater ability to divert PMI away from the ED compared to an informal mental health and police partnership (e.g. Separate Response Model). Lastly, it is hypothesized that individuals apprehended on a substance-related MHAA will be discharged from the ED more often, compared to individuals apprehended on a non-substance-related MHAA.

1.2 Background

Deinstitutionalization has resulted in more PMI being discharged into communities that lack services to safely and effectively stabilize this population (Bachrach, 1983). As a result, police services are left as the de facto mental health providers (Patch & Arrigio, 1999). Police members facing calls involving PMI are left to make critical decisions regarding the need for psychiatric intervention; thus, acting as a gateway for the mental health system (Canada, Angell, & Watson, 2012).

Police are duty-bound to ensure safety for a population. When police are unable to ensure the safety of PMI, police act to provide PMI with access to a healthcare professional. Safety will be paramount over all other concerns. Police serve as a contact point for accessing addictions and mental health services. Patrol members are the most likely to be the initial responders to encounter persons in mental health crises (Lamb, Weinberger, & DeCuir, 2002). Regardless of the reason behind a call for service, police are tasked with ensuring a safe and effective outcome for community members. Whether or not an individual is suffering from an acute mental illness or a substance-induced disorder at the time of police involvement, is immaterial. Police are left to mitigate the risk of the presenting signs and symptoms, from either a psychiatric or a substance-induced etiology, if not both. The Mental Health Act of Alberta specifies PMI who are apprehended by police must be conveyed to a *designated facility* (*Mental Health Act,* R.S.A., 2010). Designated facilities are healthcare settings, typically a traditional hospital, largely located in urban areas. A designated facility has the resource capacity to care for PMI who are detained via the Mental Health Act. In the event PMI are apprehended by police in a rural setting, available designated facilities would likely be limited in comparison to those available in a large city.

1.3 Significance

In Edmonton, prompt access to mental health crisis services has negated the need for police patrol members to complete a MHAA in nearly 100% of cases (personal communication Pamela Coulson, June 2017). In December 2016 when prompt access to community based mental health crisis services did not occur, nearly 70% of PMI

apprehended by Patrol were discharged from the emergency department (ED) (personal communication Pamela Coulson, June 2017).

It is anticipated the results will reflect the existing mental health knowledge base of police members. It is also anticipated the results will reflect on common occurrences precipitating police calls for service (e.g. substance use resulting in police intervention). Research results will assist in clarifying areas of success within police training and may potentially address areas for improvement. Research results will equally identify areas where involving a mental health professional is ineffective.

Successful diversion of PMI away from the ED to appropriate and effective mental health services would be of benefit to multiple stakeholders. Fewer MHAA presentations to the ED may help to increase police presence on the streets, which, in turn, would allow police to focus on proactive crime prevention and decrease response-to-call times. Decreased MHAA presentations to the ED would relieve ED bed pressures. Fewer MHAA presentations to the ED would place less pressure on the acute environment of the ED. The purpose of this research is to examine the outcomes of two mental health and police collaborative models in diverting PMI away from the ED to appropriate and effective community resources and services.

Outcomes following a MHAA with and without prior consultation to a mental health crisis service will be examined. Recognition of mental health issues by police and the effectiveness of existing community mental health supports will be examined. Areas for improvement and expansion may be identified with the end goal of improving client care. Outcomes from research may directly benefit an area of law enforcement and mental health collaboration that remains in its infancy. Psychiatric Nurses stand to play a

role in diverting PMI from a MHAA through effective recognition, assessment and stabilization to appropriate services in the community.

In a Canadian study based in British Columbia, most of the contact between police and PMI was informal in nature (75%) and street stop-and-checks (68%) (Livingston, Desmarais, Verdun-Jones, Parent, Michalak, & Brink, 2014). Police are regarded as the initial gatekeeper for mental health services as they are first-responders to calls for service involving PMI (Canada, Angell, & Watson, 2012). Charette et. al. (2011) found Canadian police calls for service involving PMI were twice as lengthy (89.1 minutes) as non-PMI (40.4 minutes) calls for service.

In review of existing literature, the dominant model of mental health and police partnership is the Crisis Intervention Team (CIT) model. The CIT model, originating from Memphis Tennessee, involved formal mental health training for police members (Borum et. al., 1998). Although a dominant model in the United States, this model is less prevalent in Canada (Coleman & Cotton, 2010) likely due to the presence of a publicly funded healthcare system, enabling greater police and mental health stakeholder partnership. The CIT model is not one of the mental health and police partnerships examined in this research.

The Knoxville Model of collaboration involved a partnership between police and a community agency (Borum et. al., 1998; Deane et. al., 1999) and has been identified as the preferred time and resource intensive choice (Brown Cross et. al., 2014; Shapiro, Cusi, Kirst, O'Campo, Nakhost, & Stergiopoulos, 2015). The original concept of police and community agency partnerships had evolved to include the Ride-Along Model (RAM) (Boscarato et. al., 2014), the Police Ambulance Crisis Emergency Response

(PACER) model (Huppert & Griffiths, 2015), the Integrated Mobile Crisis Service (IMCS) out of Halifax (Kisely et. al., 2010), and the System-wide Mental Assessment Response Team (SMART) out of Los Angeles (Lamb et. al., 1995). Health service and police partnership is more prevalent in Canada, as Canada has a publicly funded health care system and stricter gun control laws, allowing for greater mental health and police collaborative efforts (Coleman & Cotton, 2010). Specific to this research, the Knoxville Model examined is the formal partnership between Alberta Health Services (Police and Crisis Team – PACT) and the Edmonton Police Service.

The Separate Response Model comprised informal collaboration between mental health and policing, where both stakeholders are involved on the scene but arrive independently of one another (Boscarato et. al., 2014). Specific to this research, the Separate Response Model examined is the informal collaborative effort between Alberta Health Services' Urgent Services team and the Edmonton Police Service.

1.4 Current models of AHS mental health and police collaboration

Diversion away from hospital EDs to community resources by members of the Edmonton Police Service (EPS), the Police and Crisis Team (PACT) and Urgent Services (US) will be examined. Inpatient admission rates from calls for service involving consultation to Urgent Services, a Separate Response Model of collaboration, and the Police and Crisis Team (PACT), a Knoxville Model of collaboration will be compared and contrasted. The prevalence of substance related MHAA will be examined. Finally, inpatient admission rates following MHAA by EPS will be examined.

Urgent Services is a publicly funded 24/7 service run by Alberta Health Services (AHS) wherein any community member, including police, can access or consult

addiction and mental health services on an urgent basis. US is comprised of a multidisciplinary team including: Registered Psychiatric Nurses, Registered Nurses, Occupational Therapists, Registered Psychologists, and Masters-prepared Social Workers. US maintain a call centre where calls are assessed and triaged. If the call cannot be resolved with safe and effective stabilization, US completes a mobile mental health assessment. The resulting mobile mental health assessment may result in a connection to community-based services. Alternatively, US may liaise with EPS in the event a MHAA is deemed appropriate. Ultimately, the decision to enact a MHAA (see Appendix B – Form 10) would be determined by EPS; however, US would advocate for the client and highlight the level of risk present.

PACT is comprised of an US staff member employed by AHS paired with a designated EPS member. PACT operates in both a first responder and consultative capacity with both EPS members and US staff. At times, police may be left with no other option than to complete a MHAA to ensure safety for the individual and the community.

The Urgent and Intensive Services portfolio with AHS includes both Urgent Services and PACT. Between the Urgent and Intensive Services portfolio and EPS, MHAAs (see Form 10 in Appendix A) have been tracked between January 1, 2016 and December 31, 2016. Data specific to EPS involvement was gathered from all four hospital ED sites in Edmonton where Form 10s can be taken. The suburban RCMP detachments also must bring their MHAAs to one of four Edmonton hospitals; however, those outcomes are not reflected in the data.

The governing body of the EPS, the Edmonton Police Commission, had requested service-wide outcomes surrounding MHAA (personal communication, Cst. R. Martynuik,

2013). The data is accurate and accessible through Pamela Coulson, the Edmonton Zone Director of Urgent and Intensive Services of AHS.

Evaluation research serves to determine whether or not a program is meeting its goals (Polit & Beck, 2012). No evaluative research of inpatient admission rates following MHAA could be found in the literature. Evaluation of the effectiveness of two separate mental health and police collaborative models will help to justify the programs' successes and will serve to further promote expansion of existing services. Impact analysis along with secondary analysis will be used in the research.

Although there is evidence of effective individual models of mental health and police collaboration, there is a gap in the literature regarding collaboration between two mental health and police collaborative models within one geographical setting. Additionally, there is a gap in the literature regarding inpatient admission rates in general, but more specifically no known data on inpatient admission rates of a joint-partnership of two collaborative partnerships working together. It is anticipated results of this research will offer new findings through a retrospective analysis of accessible data. It is feasible and will add to the existing body of literature. The results of this research will fill an identified gap in the knowledge base (Cotton & Coleman, 2010; Tyuse, 2012; Cotton et. al., 2007; Compton et. al., 2008).

Chapter 2 - Literature Review

2.1 Police as the initial responder

Police are often first responders to situations involving mental illnesses (Augustin & Fagan, 2011; Boyd, Boyd, & Kerr, 2015) and are recognized as first-responders to a plethora of non-criminal societal issues (Bittner, 1967) with often limited and inefficient

police resources (Boyd et. al., 2015). As first responders to calls involving mental health, police are often referred to as the initial gatekeeper for mental health services and the criminal justice system (Canada, Angell, & Watson, 2012; Grudzinskas, Clayfield, Roy-Bujnowski, Fisher, & Richardson, 2005; Hartford, Carey, & Mendonca, 2006; Lamb, Weinberger, & Gross, 2004; Patch & Arrigo, 1999).

Police are often regarded as being society's general-purpose emergency service, given that they are called upon when all other options have been exhausted (Olivia & Morgan, 2010). Police were identified as having substandard training and yet, they were put in the position of gatekeeper to mental health services (Laing, Halsey, Donohue, Newman, & Cashin, 2009). Nuisance behaviors are acts that annoy or bother members of the general public (Baillergeau, 2014) but may be non-criminal in nature. Adding to this, nuisance behaviors placed pressure for resolution on police, largely due to public perception (Schulenberg, 2016). Police and Corrections were agencies never intended to provide mental health services, yet are expected to have regular dealings with persons with mental illness (Martinez, 2010).

The deinstitutionalization of PMI (e.g. the closing of inpatient psychiatric institutions and reintegration of PMI into community settings) occurred in response to several factors: the cost of inpatient treatment, emergence of new psychotropic treatment, increased public awareness to substandard conditions, and human rights violations (Novella, 2008). Initial involvement with police and PMI is viewed as a necessity in response to a failed system (Cotton & Coleman, 2010). PMI are subjected to criminal prosecution due to a number of factors including the aftereffects of deinstitutionalization; police management of mental health crises; and inadequate access to treatment (Hartford

et. al., 2006). Deinstitutionalization occurred with minimal foresight to consequences (Cotton & Coleman, 2010; Lurigio, 2000) and resulted in increased homelessness and mental illnesses in prison due to inadequate community supports (Chappell, 2010). Furthermore, deinstitutionalization resulted in increased PMI coming to police attention (Patch & Arrigo, 1999) and zero-tolerance policies were noted to further criminalize PMI (Schulenberg, 2016). Changes in involuntary commitments further limited access to services (Lurigio, 2000). The use of the medical model in treating PMI is ineffective, as the medical model does not address socio-economic issues (Grudzinskas et. al., 2005); however, while in custody, PMI often go unnoticed unless acute symptomatology is present (Lurigio, 2000). Existing outpatient services were largely compartmentalized with more exclusionary than inclusionary criteria (Lurigio, 2000) thereby limiting restraining accessibility of these services.

Police criminalization of PMI has been viewed as a means of connecting PMI to mental health services, yet mental health services are rare and long term follow up does not exist in the criminal justice system (Lurigio & Watson, 2010). Mental health calls were common and significant operational problems for all police (Borum, Deane, Steadman, & Morrissey, 1998) and are frequent and time-consuming (Boyd et. al., 2015). A review of the literature noted police often handle mental health calls informally, since a mental health apprehension is time intensive (Lord & Bjerregaard, 2014). Police are pressured to take calls for service, yet the time-intensive nature of a mental health apprehension was cited as a factor in PMI being arrested as opposed to conveyed to hospital (Lurigio & Watson, 2010). Calls to the police regarding severe mental illness have increased, resulting in a large impact on the individual, police and the public

(Hensen et. al., 2016). Increased demand of PMI requiring police intervention may be a sign of population growth as much as it could be from an increase in illness recognition (Durbin, Lin, & Zaslavska, 2010).

Police response to PMI has become more formalized (Hartford et. al., 2006). For example, Chicago police members are verboten by law from denying people access to mental health services (Martinez, 2010). A common and recurrent theme amongst police services is a deficit in members' mental health knowledge. (Clayfield, Fletcher, & Grudzinkas, 2011). Police are important stakeholders as effective symptom recognition is key to formulating a disposition (Hensen et. al., 2016). Police have an obligation to recognize and act on behaviours that stem from impaired judgment caused by a mental disorder. Impaired judgment may result in an individual causing harm to themselves or others, even in the absence of direct suicidal or homicidal ideation (Hoffman, Hirdes, Brown, Dubin, & Barbaree, 2016). Police were identified as having roles other than crime-fighter; evolving roles required increased means of meeting expectations (Charette, Crocker, & Billette, 2014). Police are expected to quell violence, yet compassionate and courteous behavior is equally expected (Chopko, 2011). A split between public expectations of police actions versus what police are trained to do was identified (Demir, Broussard, Goulding, & Compton, 2009). The majority of police encounters with PMI did not result in emergency apprehension (Bittner, 1967); however, the demographic of PMI involved with the legal system are often frequent users of mental health services (Grudzinskas et. al., 2005). Police are identified as empathizers and validators of the concerns of PMI (Bittner, 1967) however mental health is a contributive factor, not a causative factor for a mental health crisis (Bonfire, Ritter, & Munetz, 2014). Given the

absence of standardized procedures for dealing with PMI, critical thinking is crucial regardless of the circumstances for policing (Bittner, 1967).

A need for innovation is evident as police involvement with PMI had been inefficient, resulting in long wait times and increased emergency department burden (Huppert & Griffiths, 2015) creating a 'bottleneck' of PMI in the emergency department (McKenna, Furness, Oakes, & Brown, 2015). Police involvement begins with the police dispatcher who acts as the initial gatekeeper, far before traditional police involvement (Canada et. al., 2012). Police dispatchers may lack awareness and training of mental illness symptomatology; thus, police members trained in mental health are often not consistently dispatched to mental health calls appropriately (Canada et. al, 2010). Mental health knowledge and skill required for police dispatchers is markedly different from other areas in policing (Coleman & Cotton, 2014). Literature surrounding mental health training largely focuses on the front-line police member, neglecting the role of the dispatcher (Ritter, Teller, Marcussen, Munetz, & Teasdale, 2011). Estimating risk, as opposed to determining exact risk, has been identified as beyond the scope of policing since police are not trained as mental health experts (Bittner, 1967). Police are left to differentiate between para-suicidal gestures and potentially lethal suicide attempts (Bittner, 1967). Despite the frequency of involvement with PMI, police may be interpreted as being more accepting of PMI compared to the rest of society (Cotton, 2004).

What police are trained to do may be harmful toward PMI, their families, and even police members (Demir et. al., 2009). For example, although fatalities with Tasers and mental illness are rare (Parent, 2011), such fatalities are highly publicized (Chappell,

2010). Parent (2011) noted from 1999-2009, police in British Columbia fatally shot 30 individuals, of which eight had a history of mental illness. Risk factors with Taser use are evident, however empirical research is lacking and currently does not indicate Tasers to cause death; Tasers were implemented to reduce injuries to persons with mental illness and police (O'Brien & Thom, 2014). A police response to a fatal threat may result in the loss of life, in order to save a life (Demir et. al., 2009) yet police use of force is relatively rare in overall police interactions (Morabito et. al., 2012).

2.2 Police Encounters with PMI

The principle of support versus punishment is imperative in ensuring effective care delivery to PMI (Grudzinskas et. al, 2005). PMI are more likely to be arrested for minor, non-violent offenses (Charette et. al, 2011; Grudzinskas et. al, 2005) such as public intoxication and nuisance type behaviors. The use of criminal arrests and charges with PMI may be attributed to a lack of diversion options, lack of treatment, or lack of housing (Hartford, Heslop, Stitt, & Hoch, 2005). Inadequate community services and a rigid change in criteria for civil commitment often result in prison being the only viable treatment option for PMI (Lamb et. al, 2004). A lack of accessible mental health services results in arrests and transport of PMI to jail – an act referred to as 'mercy bookings' (Lamb et. al., 2002). The American constitution guarantees healthcare services to people in the criminal justice system, yet services offered are limited and understaffed (Martinez, 2010) whereas the Canadian constitution does not cite healthcare as a constitutional right. In order for Provinces to receive federal transfer payments designated for healthcare, the principles of the Canada Health Act must be followed (*Canada Health Act,* S.C., 1984).

Provincial adherence to the Canada Health Act ensures access to free, appropriate, high quality healthcare for Canadian residents.

Access to healthcare may influence the manner in which PMI receive care. A 'hydraulic model' of social control resulted in lower rates of incarceration with higher rates of PMI inpatient hospitalization; conversely low rates of PMI inpatient hospitalization resulted in higher rates of incarceration (Grudzinskas et. al., 2005). Mental health and legal systems are described as having 'porous boundaries' (Lurigio & Watson, 2010). In other words, both are interrelated and what happens with one will affect the other. The availability of an effective healthcare system may mitigate PMI away from the legal system and toward patient-centered healthcare.

Police typically identify PMI under three general means: apprehending PMI on an emergency basis for a psychiatric assessment; apprehending PMI via court order; and encountering PMI via traditional police calls (Bittner, 1967) and contact between police and PMI was frequently initiated by calls from the public (Lamb et. al, 2002). In a Canadian study based in British Columbia, the majority of contact between police and PMI was through casual, informal encounters (75%) and street stop-and-checks (68%) (Livingston et. al., 2014).

The manner in which police perceive signs of mental illness influences how they will respond (Hoffman et. al, 2016). PMI in low-income neighborhoods may be misinterpreted as having addictions issues or developmental delays, when in fact a mental illness may be present (Krishan et. al., 2014). PMI come to the attention of police as a result of 'overt psychiatric behavior and the associated nuisance' (Hensen et. al, 2016, p.2) due to an exacerbation of illness. The most common PMI presentations to police

have been disorganized and bizarre behavior (Lamb, Shaner, Elliott, DeCuir, & Foltz, 1995; Sheridan & Teplin, 1981) as the result of disorganized thinking, hallucinations, and delusional ideations (Lamb et. al., 1995).

Mental health is defined as a contributive factor, not a causative factor for a mental health crisis (Bonfire et. al, 2014). High-risk factors for mental health crises include psychosocial and socioeconomic changes in the lives of PMI (Hensen et. al, 2016). PMI often come to the attention of police during exacerbations of emotional disturbance (Olivia & Morgan, 2010) and must get 'sick enough' before an apprehension can occur (Bradbury, Ireland, & Stasa, 2014). Middle-aged males with histories of Axis I disorders (e.g. schizophrenia, bipolar disorder, and depression), previous criminal involvement and previously victimized in a crime were found to be the highest risk for potential police provoked shootings as a means of suicide (McLeod, Thomas, & Kesic, 2014).

The use of TASER devices is becoming more prevalent in high-risk calls involving PMI. Risk factors with TASER use are evident, however, empirical research is lacking and currently does not indicate TASER use to cause death (O'Brien & Thom, 2014). Over a ten-year period from 1999-2009 in British Columbia, police had fatally shot 30 people; mental illness and suicidal behavior accounted for 8 of the 30 (Parent, 2011). With the eight fatalities, the TASER was deployed but unsuccessful in 3 of the 8 fatal shootings (Parent, 2011).

In a Canadian study comparing the duration of calls for service, Charette et. al., (2011) found calls for service involving PMI were twice as lengthy (89.1 minutes) as non-PMI (40.4 minutes) calls for service. Furthermore, the length of time for mental

health apprehensions and arrests were more than double compared to an informal disposition (Charette et. al., 2011). Schulenberg (2016) noted that encounters involving PMI were on average 20 minutes longer than typical police calls. Referral of PMI to mental health services was equally as time-consuming as an informal disposition (Charette et. al., 2011). PMI who present to emergency departments with police via police referral include the following common characteristics: male; a recent history of violence defined as "…actual or threatened physical aggression toward another person or toward property" (Redondo & Currier, 2003, p. 805); violence in the emergency department; and, a lifetime history of violence and presence of acute psychosocial stressors (Redondo & Currier, 2003). Violence to self/others, alcohol use, physical health concerns and suspicions of medication non-compliance increased the likelihood of transport to hospital (Ritter et. al., 2011). In a study conducted by Redondo and Currier (2003), violence was cited as largely attributable to Axis II (e.g. emotional dysregulated behaviors) versus Axis I pathology. Once in the emergency department, PMI who experienced a crisis catalyst were likely to settle following food, sleep, and empathetic human interaction (Pakes, Shalev-Greene, & Marsh, 2014).

2.3 Mental Health Crisis Response Models

Police interactions can significantly influence the lives of PMI (Livingston et. al., 2014). The presence of mental health professionals in high-risk incidents positively correlates to peaceful outcomes whereas a police-only approach positively correlates to increased tension and often, undesirable outcomes (Augustin & Fagan, 2011). A correlation between PMI was noted in high-risk incidents requiring crisis negotiation, yet causation of mental illness and crisis situations is not definite (Grubb, 2010). Mental

health professionals are identified as vital stakeholders in contemporary policing operations, from the front-line to the most acute crisis negotiations (Coleman & Cotton, 2010). The role of mental health professionals has existed in crisis negotiations, yet the roles of mental health professionals continue to expand (Grubb, 2010). Reactive police intervention and proactive implementation of mental health supports contribute to positive outcomes for PMI (Bonkiewicz, Green, Moyer, & Wright, 2014). Though basic training in mental health exists for police services, these training programs are largely inconsistent (Augustin & Fagan, 2011). Conventional literature regarding police and mental health collaboration advocates for an enhanced police role during interactions with PMI (Bradbury et. al., 2014). While psychiatric nurses have the capacity to intervene therapeutically upon their assessment of PMI, police were limited to symptom recognition of illness (Ellis, 2014).

A pragmatic problem-solving approach brought to police work led to the success of crisis intervention teams (CIT) (Augustin & Fagan, 2011), yet the need for increased coordination and collaboration between mental health and police stakeholders is evident (Boscarato et. al., 2014). Consensus regarding the level of mental health training required for police officers remains a contentious issue (Clayfield, et. al., 2011). A lack of police training in mental health may result in the criminalization of PMI (Lamb et. al., 2002). Leadership at the administration level is crucial for improved knowledge, tactics, and resources at the front-line level (Coleman & Cotton, 2010). Content specific to CIT focused on goals of decreasing arrests of PMI and increasing access to mental health services with the benefits of CIT training resulting in increased knowledge and skill filter throughout the police department (Bonfire et. al., 2014; Canada, et. al., 2010; Canada et.

al., 2012). Additional goals of CIT include meeting the needs of PMI, keeping PMI out of jail, minimizing police times dealing with PMI (Borum et. al., 1998) and reducing injuries between PMI and police (Brown Cross et. al., 2014). Psychiatric nurses are frequently identified as key stakeholders in ongoing CIT development through partnership with police services (Ellis, 2014).

The CIT model, originating from Memphis Tennessee, involved mental health training for police members (Borum et. al., 1998; Boscarato et. al., 2014; Deane, Steadman, Borum, Veysey, & Morrissey, 1999) and ensured appropriate mental health apprehensions of PMI (Broussard, McGriff, Demir Neubert, D'Orio, & Compton, 2010). Benefits of CIT included the knowledge and ability to recognize illness (McGriff, Broussard, Demir Neubert, Thompson, & Compton, 2010). Application of CIT knowledge was useful in differentiating drug and alcohol behaviors from symptoms of mental illness (Canada et. al., 2010) and resulted in better assessment, response tactics, and disposition outcomes for PMI (Canada et. al., 2012). Symptoms resulting from alcohol or substance abuse may be misinterpreted as related to mental illness, further complicating the job of police (Lamb et. al., 2002). Since its inception in 1988, CIT has been implemented in over 3000 police services (Brown Cross et. al., 2014). CIT has demonstrated limited effectiveness in settings lacking access to mental health services (Canada et. al., 2010). CIT trained police are more likely to report increased calls with PMI compared to non-CIT trained police (Canada et. al., 2012). CIT trained police are more likely to refer or transport PMI to services and less likely to arrest a PMI (Compton et. al., 2014b) and less likely to use force as a PMI demeanor became more resistant (Morabito et. al., 2012). While CIT training is an integral part of mental health and

police collaboration, it is not the only mean of collaboration (Compton et. al., 2014a). Identified barriers for implementation of CIT amongst police leadership include a small workforce, financial cost, shift coverage, and substandard access to mental health services (Compton, Broussard, Reed, Crisafio, & Watson, 2015). Kohrt and colleagues (2015) highlight the example of Liberia, a post-war, impoverished country that recently endured a near pandemic Ebola health crisis, yet authorities were able to effectively customize CIT training. Cost savings of CIT did not have a sole beneficiary; rather savings were spread across several mental health stakeholder services (El-Mallakh, Kiran, & El-Mallakh, 2014). Thus, proactive interventions with limited resources can improve services.

The Knoxville Model of collaboration involves a partnership between police and a community agency (Borum et. al., 1998; Deane et. al., 1999) and has been identified as the preferred time and resource-intensive choice (Brown Cross et. al., 2014; Shapiro, Cusi, Kirst, O'Campo, Nakhost, & Stergiopoulos, 2015). Similar models involving police and community agency collaboration are the Ride-Along Model (RAM) (Boscarato et. al., 2014), the Police Ambulance Crisis Emergency Response (PACER) model (Huppert & Griffiths, 2015), the Integrated Mobile Crisis Service (IMCS) out of Halifax (Kisely, Campbell, Peddle, Hare, Pyche, Spicer, & Moore, 2010), and the System-wide Mental Assessment Response Team (SMART) out of Los Angeles (Lamb et. al., 1995). Health service and police partnership is more prevalent in Canada, as Canada has a publicly funded health care system and stricter gun control laws, allowing for greater mental health-police collaborative efforts (Coleman & Cotton, 2010). PACER operates in a secondary response capacity, further reducing the risk to the mental health

professional attending with a designated police officer (Huppert & Griffiths, 2015). The IMCS partnership comprised a designated plain-clothed police member with a mental health professional (Kisely et. al., 2010). In over 80% of police calls for service involving PMI, a Seattle-based collaborative model was able to refer to non-law enforcement community agencies (Helfgott, Hickman, & Labossiere, 2016). PACER provided ease of access to front line police officers, often negating the need for a mental health apprehension (Huppert & Griffiths, 2015). During the study timeframe, only 27% of PMI encountered by PACER required conveyance to an emergency department for further assessment (Huppert & Griffiths, 2015). Co-responding mental health and police partnerships were more likely to link PMI to community services, whereas CIT was more prone to transport PMI to hospital (Shapiro et. al., 2015).

The Birmingham model of collaboration involves mental health professionals working for the police department (Borum et. al., 1998; Deane et. al., 1999). A similar model involving mental health professionals employed by the police department is the Embedded model (Boscarato et. al., 2014). The Separate Response model comprises informal collaboration between mental health and policing, where both stakeholders are involved on the scene but arrive independently of one another (Boscarato et. al., 2014)

Challenges continue to exist in mental health and police collaboration. Poor interagency relationships, limited information sharing, ineffective communication, lack of professional respect, and lack of role clarity have been identified as barriers limiting effective collaboration (Hollander, Lee, Tahtalian, Young, & Kulkarni, 2012). Role distinction between the police officer and mental health professional (Lamb et. al., 2002), attention to safety issues, ongoing collaboration, optics and role confusion between the

mental health professional and police have also been highlighted as impediments (Kirst et. al., 2015). The need for subculture awareness within the police profession, inefficiencies in patient pathways and long wait times in emergency departments place strain on the collaborative relationship (Kirst et. al., 2015). Thus, ongoing stakeholder communication is paramount for collaboration success (Lamb et. al., 2002).

2.4 Police Perception of Mental health

Western policing attitudes have evolved to acknowledge that mental illness is part of policing (Chappell, 2010). Yet, police may view mental health professionals as 'too therapeutic' (Augustin & Fagan, 2011). Police who have had greater exposure to calls for service involving PMI report increased negative attitudes (Clayfield et. al., 2011) including pessimism and the belief that PMI are dangerous and threatening (Krameddine, DeMarco, Hassel, & Silverstone, 2013). Boyd and colleagues (2015) noted police correlated violent acts to a mental health diagnosis. For example, police may surmise that an individual with a diagnosis of schizophrenia, may be dangerous, while at the same time viewing that same individual as being less responsible for their actions due to their diagnosis, thereby becoming an object of pity (Watson, Corrigan & Onnati, 2004). Even when physical force was required, CIT trained police were less likely to arrest PMI (Compton et. al., 2014b) and less likely to use force overall, even identifying the use of physical force as less effective than non-physical actions (Compton et. al., 2011). Traditional and cultural differences within the professions of police and mental health professionals are often cited as an obstacle (Augustin & Fagan, 2011). An increased level of knowledge pertaining to mental health amongst police members results in increased empathy for PMI (Bonfire et. al., 2014), while training and preparation

regarding mental health increases confidence and comfort (Borum et. al., 1998). Preexisting stigma may negatively taint police attitudes toward PMI (Bonfire et. al., 2014; Clayfield et. al., 2011); however, as Cotton (2004) notes police do not tend to display high levels of authoritarianism or social exclusion attitudes towards PMI. Increased comfort and knowledge of mental health decreases the likelihood of force to be used (Bonfire et. al., 2014). Disparaging attitudes towards mental illness is thought to be associated with negative behaviors (Clayfield et. al., 2011). Improved knowledge of mental illness contributes to shifts in attitude and dispelling stigma from previously held beliefs (Hanafi, Bahora, Demir, & Compton, 2008). Changes in police attitudes are described as a precursor to changes in their behavior (Bonfire et. al., 2014); however interestingly, behaviors can be changed alone without a change in attitude (Krammeddine et. al., 2013). The attitude that PMI are dangerous can lead to the overuse of the TASER as TASER research has been noted to vary, often minimizing negative outcomes potentially leading to overuse (O'Brien & Thom, 2014).

The CIT model ranked the highest of the three main (Memphis, Birmingham, & Knoxville) mental health-police collaborative relationships amongst police; all Memphis CIT apprehension were brought to one main emergency department where access to services was streamlined and efficient (Borum et. al., 1998). CIT knowledge was deemed as useful for police in differentiating between drug/alcohol behaviors from symptoms of mental illness (Canada et. al., 2010). Memphis CIT did not rely on on-scene community stabilization, while Birmingham and Knoxville models did not exclusively rely on emergency department intervention, thus their perceptions of mental health services were viewed as moderate and low respectively (Borum et. al., 1998).

Following CIT training, police were more likely to endorse biological causes of schizophrenia versus sociocultural and socioeconomic causes (Demir et. al., 2009) and increased knowledge and attitude changes resulted in increased empathy for PMI (Hanafi et. al., 2008). Furthermore, CIT training affected police beliefs positively, placing beliefs in line with those of mental health professionals (Demir et. al., 2009.

PMI identified the ride-along model (RAM) as the preferred mental health response when compared to other models (Boscarato et. al., 2014). Furthermore, all PMI indicated a preference for informal crisis intervention through non-police, already established supports (Boscarato et. al., 2014). The desired theme of greater interdisciplinary collaboration between police and mental health was identified (Boscarato et. al., 2014) and clients seen by the RAM-type model were noted to have greater engagement with outpatient services compared to clients with no RAM-type model (Kisely et. al., 2010).

2.5 Therapeutic communication

Communication is an interactive process, requiring attention and investment into the conversation (Greenstone, 2004). Interpersonal communication requires sending and receiving information between two or more people (Matusitz, 2013). Psychiatric nurses and police share similar skillsets taught in the CIT curriculum (Ellis, 2014). A PMI based theme of satisfaction was related to the establishment of a strong therapeutic relationship (Barker et. al., 2011) yet mental health professional communication may be lacking in basic Active Listening Skills (ALS) as PMI may feel more empathy and validation via communication from a peer (Forchuck et. al., 2010). Communication has three components: a content message; a feeling message; and a meaning message

(Greenstone, 2004). According to Boscarato and colleagues (2014), increasing ALS over mental health knowledge should be emphasized. Thus, time and ALS enabled clarification of PMI needs resulting from police calls for service and are crucial for success (Canada et. al., 2012). Clarification, effective questioning, listening, and nonverbal communication are all components of effective communication (Greenstone, 2004). The use of empathy, validation and respect for the PMI transcends the professional designation (Kirst et. al., 2015). A lack of communication or the presence of miscommunication may further serve to propagate the development of psychosis in a PMI (Gregory & Thompson, 2013). The importance of verbal de-escalation skills is inherent to police success with PMI (Canada et. al., 2010) as verbal de-escalation skills are crucial for diverting PMI away from jail often, through the resolution of emotional dysregulation (Compton et. al., 2014a). For example, due to training in verbal de-escalation skills Compton and colleagues found that verbal engagement and negotiation were more effective in CIT trained police, and on-scene resolution was more feasible when no force or lower force was used (Compton et. al., 2014b).. CIT trained police may interpret resistive demeanor as a symptom of illness and implement de-escalation techniques (Morabito et. al., 2012). Application of de-escalation skills assisted police in putting PMI at ease, having greater control over unpredictability, and reducing the risk of officer injury (Hanafi et. al., 2008). Compton, Broussard, Hankerson-Dyson, Krishan, & Stewart-Hutto (2011) also note that while CIT training did not impact empathy or psychological mindedness, these may be person-specific stable traits and that some police are better suited for mental health work than others.

Crisis Negotiator Teams are viewed as a complement to tactical police intervention; recognizing the value of mental health professionals resulted in Crisis Negotiator Teams as the primary intervention with a tactical response as an adjunct option (Augustin & Fagan, 2011). Crisis negotiators borrow theory from mental health; the Structured Tactical Engagement Process model is based on the transtheoretical stages of change model applied in addictions treatment (Grubb, 2010). Furthermore, successful negotiation depends upon exceptional communication skills (Matusitz, 2013).

2.6 Post-Mental Health Apprehension Disposition

Positive therapeutic relationships and support contribute to an increased ability for community stabilization for PMI. Proactive stabilization service implementation is associated with higher rates of community stabilization (Barker et. al., 2011). Data specific to CIT and individual PMI outcomes are not readily available, limiting future research opportunities in this area (Bonfire et. al., 2014). Existing literature focuses on the recognition of mental health issues by police with less attention given to PMI stabilization post-police involvement, often leaving the PMI unable to access services (Bonkiewicz et. al., 2014). In one example from Edinburgh, Scotland, the Crisis Resolution and Home Treatment (CRHT) team provides a 24/7 service acting as the exclusive ‘gatekeeper’ of inpatient beds. In order for PMI to be admitted to an inpatient bed CRHT, must first be involved (Barker et. al., 2011). Psychotic symptoms such as impaired insight, treatment apathy, disruptive behavior and other factors impeding community stabilization were associated with higher likelihoods of inpatient admissions (Hasselberg, Grawe, Johnson, Slatyte-Benth, & Ruud, 2013). Average inpatient admissions decreased by nearly 25% in the year since CRHT implementation and the

average length of stay was reduced by over nine days (Barker et. al., 2011). Conversely, when community stabilization options are limited, many CIT-trained officers have no choice but to bring PMI to emergency departments (Canada et. al., 2010). Patient care and outcomes are improved with police and emergency department staff members speaking a common language (Hoffman et. al., 2016). Access to acute mental health services and appropriate community stabilization options decreases the probability of requiring inpatient admission (Cotton et. al., 2007). A lack of assertive community support correlates with high inpatient admission rates (Hasselberg et. al., 2013). Of PMI brought to hospital, those brought to hospital by police and family share similar characteristics, however PMI brought in by family scored higher on the Global Assessment of Functioning, indicative of a milder severity of illness (Broussard et. al., 2010). Reasons behind police apprehension are different from reasons for inpatient admission (Hoffman et. al., 2016). Emergency department staff indicated many of the PMI brought to the emergency department by police would be discharged, causing emergency department staff to question why the PMI were brought to the emergency department in the first place (McKenna et. al., 2015). The UK Mental Health Act section 136 permits police to detain an individual for up to 72 hours to facilitate a mental health assessment; the individual must be brought to a 'place of safety', of which there are five general options – only two of which are healthcare facilities (Holmes, 2014). Following section 136 apprehensions, inpatient admission rates are 20% (Holmes, 2014). Frequent discharges post police mental health apprehension resulted in police pursuing criminal charges against PMI, as the PMI would be handled in a more systematic and predictable manner (Lamb et. al., 2004). For police, treatment of illness necessitated criminal

charges; post-incarceration, compliance with treatment was highly probable as it was a legal condition of release (Lamb et. al., 2004). Disposition of a call or service involving PMI is contingent on treatment accessibility and police knowledge regarding available mental health options (Ritter et. al., 2011). Health information facilitated dispositions in calls for service (Lamb et. al., 2002). Teller and colleagues (2006) noted a decrease in police transports of PMI to psychiatric emergency services was noted, possibly due to the effectiveness of CIT de-escalation training.

2.7 Overview of PACT and Urgent Services (US) Consultation

A visual representing the flow of PACT consultation is presented in figure 1.1 (see Appendix C). PACT operates from 0700-0100 every day of the week, while US operates 24 hours a day, seven days a week. To facilitate EPS access to PACT and US services, a direct number has been provided to all of EPS. During the PACT hours of operation from 0700-0100, the PACT number will go directly to the EPS PACT member on duty. From the hours of 0100-0700, the PACT number will go directly to the US team. This 24-hour coverage ensures a one-stop solution for EPS members who encounter a PMI with an addictions or mental health concern.

There is heavy literature that is American-based. Two different systems of healthcare exist between the privately-funded American model and the publicly-funded Canadian model. Systems and services are set up differently, thus there is not one ideal model of police and mental health partnership that can be universally applied to any setting.

Chapter 3 - Methods

The secondary data used in this research was compiled by AHS Protective Services (PS) during the entirety of the 2016 calendar year from all four *designated facilities* in the Edmonton Zone. The data was originally tracked as a means of quality improvement for the Urgent and Intensive Services portfolio within the AHS Edmonton Zone. Access to the non-patient identifying numerical data was granted by Pamela Coulson, the Director of Urgent and Intensive Services.

AHS is the largest public addiction and mental health service in Alberta. As such AHS maintains statistics and information on access, flow, and type of concern for service consumers in the province. The data gathered by AHS is, at times, used for program evaluation, planning, quality improvement, and responsiveness to emerging trends. From this information, AHS was solicited to provide data specific to research questions in the 2016 calendar year. All analysis is limited to this calendar year.

Polit and Beck (2012) noted that secondary analysis as using existing data to solve new queries and investigate new hypotheses. Furthermore, Polit and Beck (2012) postulated researchers who would be performing secondary analyses must be able to identify and access suitable databases. Benefits for secondary data use are cost and time savings whilst the disadvantages of using available data are limited for specific research questions and hypotheses (Cheng & Phillips, 2014). Polit and Beck (2012) noted a likelihood that a secondary data set is deficient in some way. The data required for this research was accessible through the Director of Urgent and Intensive Services with AHS. Attrition is a non-issue in a nonprobability study using convenience sampling. As the data has already been gathered by Urgent and Intensive Services and AHS Protective

Services, the study cannot lose participants during the course of data collection. Participants could not be disqualified from the study for any other reasons. There is a noted gap in the current knowledge base which is why the analysis of readily available secondary data is used.

A quantitative descriptive research design using chi-square analysis was used to compare frequencies. Once receiving the data, it was further delineated to reflect the three research questions. A total of 2479 PMI had been apprehended in the City of Edmonton in the 2016 calendar year. The secondary data was reviewed and three research questions were developed. Resultantly a chi-square analysis was completed to indicate the clinical significance of the occurrences reflected in the secondary data.

Individual observations are independent of one another. There are more than five observations in each expected cell. The data used is normally distributed and all assumptions have been fulfilled.

As per the aforementioned conditions and data, it is prudent to explore ways that secondary data can be translated to informed practice. AHS has a practice of quality improvement and assurance. Data was provided on the basis of this.

Disposition checks (see Appendix A) of MHAA by EPS are collected by AHS Protective Services at each of the four hospital ED sites in Edmonton.

3.1 Ethics

Ethics approval to conduct this study was granted by the Brandon University Research Ethics Board (BUREC), and AHS. This study involved analysis of non-patient identified secondary data compiled by AHS for administrative purposes, thus no personal information regarding PMIs was required. Data from January 1, 2016 to December 31,

2016 included whether or not Urgent Services or PACT were involved prior to MHAA, whether or not the individual apprehended was admitted or discharged, and from July 1, 2016 to December 31,2016 data regarding substance related MHAA was gathered.

3.2 Pathway to Patient Care

The process of PACT for this research is presented in figure 1.1 (See Appendix C). The process is an illustrated patient pathway to care. It is designed from the literature review findings and the proposed research in mind. PACT operates from 0700-0100 every day of the week. US operates 24 hours a day, seven days a week.

To facilitate EPS access to PACT and US services, a direct number has been provided to all of EPS. During the PACT hours of operation from 0700-0100, the PACT number will go directly to the EPS PACT member on duty. From the hours of 0100-0700, the PACT number will go directly to the US team. This 24-hour coverage ensures a one-stop solution for EPS members who encounter a PMI with an addictions or mental health concern.

The purpose of these variables is to identify the frequency and acuity of addictions and mental health calls for service to EPS. The effect of prompt access versus no access to crisis type mental health community-based services can be compared and contrasted. Lastly, the emphasis of a safe end to a call for service can be highlighted with the amount of PMI discharged following a MHAA.

Data comprises three sections: A, B, & C. Inclusionary criteria for Section A (see Appendix D) comprised all individuals (child, adolescent, and adult) apprehended during the year-long timeframe. No exclusionary criteria were present in Section A. The sole

limitation to this data is that PACT and US do not provide clinical intervention for child and adolescent psychiatry.

The inclusionary criteria for Section B (see Appendix D) included all addiction and mental health calls for service for EPS and US. No exclusionary criteria were present in Section B. The sole limitation for Section B data is that EPS calls for service included child and adolescent populations, whereas PACT and US involvement did not include child and adolescent populations.

The purpose of Section B variables is primarily focused on EPS' ability to divert PMI from a MHAA to the ED compared to US' ability to divert PMI from the ED. Additional variables include admission following apprehension, and discharge home following apprehension. It should be noted, admission following apprehension would not be the sole factor in determining whether or not a MHAA was the most appropriate disposition choice. Yet admission following apprehension could be indicative of EPS' ability to accurately assess the severity of illness of the PMI.

The purpose of Section C (see Appendix D) variables is to reflect the prevalence of substance related calls for service. EPS rely on formulating a safe and effective disposition plan for a call for service. The ED is a no-refusal, always open, universally accessible service for EPS to end a call for service in a safe manner. The prevalence of substance related calls for service resulting in MHA apprehension may be indicative of a lack of other means to end a call in a safe manner.

The gathered data would include the disposition following MHAA (PMI admitted/not admitted) and whether or not US or PACT was consulted prior to apprehension. Additional data had been gathered from July 1, 2016 until December 31,

2016 regarding substance related (see Appendix D) apprehensions was gathered. Specifically, whether or not substance use was a primary reason for apprehension, and the disposition following MHAA.

The accumulated data used in this research is from the 2016 calendar year. The data was gathered by Alberta Health Services Protective Services members at each of the four designated facilities accepting people apprehended on a MHAA.

3.3 Research Design

A retrospective quantitative research design using secondary data was used. The non-identifying data used in this study was captured by AHS Protective Services from the 2016 calendar year. The data was accessible, appropriate, and relevant for use.

Research Question 1

Whether the Knoxville Model (PACT) and Separate Response Model (US + EPS patrol) working together have a greater effect in diverting PMI away from the ED compared to no models?

Null Hypothesis 1

There is no difference in diversion from the ED to community addiction and mental health services between using the models (Knoxville Model and Separate Response Model) or without the model.

Research Question 2

Does the Knoxville Model or Separate Response Model have a greater ability to divert PMI away from the ED to community addiction and mental health services compared to the Separate Response Model?

Null Hypothesis 2

There is no difference between using the Knoxville Model or Separate Response Model in diverting PMI away from the ED to community addiction and mental health services.

Research Question 3

Based on known etiology related to stigma in addiction and mental health, whether the presence of substance related concern would have influence or have clinical significance in relation to admission to hospital warrants investigation. Is there a difference in disposition between substance related and non-substance related MHAAs?

Null Hypothesis 3

There is no difference in disposition between substance related and non-substance related MHAA.

The sample size for research question 1 incorporates all dispositions following MHAA from January 1, 2016 to December 31, 2016. The sample size for research question 2 was from April 1, 2016 to December 31, 2016. The sample size for research question 3 was from August 1, 2016 to December 31, 2016. Two possible disposition options exist: either the apprehended individual is admitted as an inpatient, or they are discharged home. The data for this research included every individual apprehended via Form 10 by EPS in the 2016 calendar year. This data captured the disposition following the MHAA, and whether or not US or PACT was consulted prior to the MHAA.

Chapter 4 – Data Analysis and Findings

The research was completed based on a normal distribution of chi with a clinical significance of .05 and *df* of 1. A chi-squared analysis was used to compare frequencies

of categorical data using a 2x2 table. A chi-squared test as used to determine whether a difference between the variables was present.

Table 1

Critical Values for the $\chi 2$ Distribution

df	.10	.05	.02	.01	.001
1	2.71	3.84	5.41	6.63	10.83
2	4.61	5.99	7.82	9.21	13.82
3	6.25	7.82	9.84	11.34	16.27
4	7.78	9.49	11.67	13.28	18.46
5	9.24	11.07	13.39	15.09	20.52

Research Question 1: (January – December 2016)

Whether the Knoxville Model (PACT) and Separate Response Model (US + EPS patrol) working together have a greater effect in diverting PMI away from the ED compared to no models?

Table 2

Type	Admitted to ED	Discharged from ED	Total
With Mental Health	413	453	866
Without Mental Health	361	1252	1613
Total	774	1705	2479

In this study 361 PMI brought to the ED via MHAA by police only were admitted to an inpatient unit.

$\chi 2$ (1, n = 361) = 40.38, $p < .05$. 40.38 > 3.84.

Comparatively, 413 PMI brought to the ED via MHAA by police assisted by a mental health clinician were admitted to an inpatient unit.

$\chi 2$ (1, n = 413) = 75.20, $p < .05$. 75.20 > 3.84.

Statistical significance is present for a PMI brought to ED via MHAA by either police only

($\chi 2$ = 40.38; 40.38 > 3.84), or via MHAA with the involvement of a mental health clinician and police ($\chi 2$ = 75.20; 75.20 > 3.84).

The odds ratio of a police only MHAA admitted to hospital relative to a MHAA with the involvement of a mental health clinician was 0.316. A police-only MHAA was 0.316 times less likely to be admitted in comparison to a MHAA with the involvement of a mental health clinician.

A MHAA with the assistance of a mental health clinician was over 3 times more likely (3.16) to be admitted to hospital in comparison to a Police Only MHAA.

Discharged post MHAA:

In this study 1252 PMI brought to the ED via police only (n = 1252) were discharged from the ED following a MHAA.

$\chi 2$ (1, n = 1252) = 18.33, $p < .05$. 18.33 > 3.84.

Comparatively, 453 PMI brought to the ED via MHAA by police, with mental health assessment and consultation were discharged from the ED following a MHAA.

$\chi 2$ (1, n = 453) = 34.14, $p < .05$. 34.14 > 3.84.

There is statistical significance to indicate an increased likelihood of discharge from the ED regardless if the PMI is brought to the ED by police only or following a MHAA with the assistance of a mental health clinician. The Pearson Chi-Square was 168.091. With the degrees of freedom being 1 and an alpha level of .05, there is strong evidence the difference between the groups is not due to chance. 168.091 > 3.84.

The experimental hypothesis of: Collaboration between a Knoxville Model and Separate Response Model will result in an increase in PMI being diverted from EDs to community addictions and mental health services, was supported by the findings. More PMI brought to ED via MHAA by police-only get discharged from the ED compared to MHAAs with the assistance of a mental health clinician. All chi values calculated in research question 1 remain statistically significant when compared to an alpha level of .001.

Research Question 2: (April – December 2016)

Does the Knoxville Model or Separate Response Model have a greater ability to divert PMI away from the ED to community addiction and mental health services compared to the Separate Response Model?

Table 3

Type	Admitted	Diverted	Total
Knoxville Model (PACT)	189	3603	3792
Separate Response Model	493	4802	5295
Total	682	8405	9087

189 PMI brought to the ED via PACT MHAA were admitted to an inpatient unit.

$\chi 2$ (1, n = 189) = 32.11, $p < .05$. 32.11 > 3.84.

Comparatively 493 PMI brought to the ED via Urgent Services with EPS MHAA were admitted to an inpatient unit.

c2 (1, n = 493) = 23.00, $p < .05$. 23.00 > 3.84

3603 PMI who encountered PACT at the time of crisis were diverted from the ED.

$\chi 2$ (1, n = 3603) = 2.62, $p < .05$. 2.62 < 3.84

Comparatively, 4802 PMI who encountered Urgent Services with EPS at the time of crisis were diverted from the ED.

$\chi 2$ (1, n = 4802) = 1.87, $p < .05$. 1.87 < 3.84

The odds ratio indicated a PMI is 96.57 times more likely to be diverted from hospital via the Separate Response Model than through the Knoxville Model. Conversely the odds ratio of a PMI being diverted from hospital via the Knoxville Model as opposed to the Separate Response Model is 0.010. The Pearson Chi-Square value was 59.581. With the degrees of freedom being 1 and an alpha level of .05, there is strong evidence the difference between the groups is not due to chance. 59.581 > 3.84. When compared to an alpha level of .001 the chi value remained statistically significant. 59.581 > 10.828.

There is statistical significance to indicate an increased likelihood of diversion from the ED if the PMI encounters the Separate Response Model at the time of crisis. The experimental hypothesis of: One mental health consultation model (e.g. Knoxville Model (PACT) or Separate Response Model (US with EPS)) will be better able to divert

PMI away from the ED, was supported by the findings. The Separate Response Model is more successful at diverting PMI away from the ED compared to the Knoxville Model.

Research Question 3: (August – December 2016)

Based on known etiology related to stigma in addiction and mental health, whether the presence of substance related concern would have influence or have clinical significance in relation to admission to hospital warrants investigation. Is there a difference in disposition between substance related and non-substance related MHAAs?

Table 4

Type	Admit from ED	Discharge from ED	Total
Substance related MHAA	170	406	576
Non-Substance related MHAA	169	239	408
Total	339	645	984

169 PMI with a non-substance related MHAA were admitted to an inpatient unit.

$\chi 2$ (1, n = 169) = 5.74, $p < .05$. 5.74 > 3.84.

Comparatively, 170 PMI with a substance related MHAA were admitted to an inpatient unit.

$\chi 2$ (1, n = 170) = 4.06, $p < .05$. 4.06 > 3.84.

The odds ratio of a substance related MHAA being admitted is 0.59 times more than a non-substance related admission.

239 PMI apprehended on non-substance related MHAA were discharged from the ED.

$\chi 2$ (1, n = 239) = 3.02, $p < .05$. 3.02 < 3.84.

In comparison 406 PMI apprehended on substance related MHAA were discharged from the ED. $\chi 2$ (1, n = 406) = 2.14, $p < .05$. 2.14 < 3.84.

The odds ratio of a non-substance related MHAA is 1.69 more times likely to be admitted than a substance related MHAA. The Pearson Chi-Square value was 14.996. With the degrees of freedom being 1 and an alpha level of .05, there is strong evidence the difference between the groups is not due to chance. 14.991 > 3.84

There is no statistical significance to indicate a PMI apprehended on a substance related MHAA is more likely to be discharged from the ED. The experimental hypothesis of: There is a difference in disposition between substance and non-substance related MHAA was not supported in the findings.

The involvement of a mental health clinician influenced whether or not PMI apprehended on a mental health apprehension were admitted to hospital. PMI were more likely to be discharged from an emergency department without the involvement of a mental health clinician. In comparison, the informal Separate Response Model was more effective than the formal Knoxville Partnership was in diverting PMI away from the emergency department. Substance related and non-substance related apprehensions had no bearing on whether or not the PMI was admitted to hospital, or discharged from the emergency department.

Prompt access to a mental health clinician at the time of crisis enables police to better ensure proper care is being delivered to the subject of the call for service. In

addition to greater likelihood of safe and effective community stabilization through linkage to appropriate services, informal partnerships may prove more cost-effective for police services than would a formal partnership or formal training. Regardless of any substance use or not, there is no indication substance use affects either admission or discharge from hospital rates. Apprehension and admission to hospital is based on presenting symptoms, not the underlying etiology of those symptoms.

Chapter 5 - Discussion

Police members are tasked with making dangerous high-stakes decisions with potentially fatal outcomes (Rosenbaum, Tinney, & Tohen, 2017). Mental health crises require both mental health and police professionals to combine professional skillsets to recognize and mitigate risk factors (Lamb et al., 2004). Collaboration between psychiatry and police is needed more than ever (Rosenbaum et al., 2017) yet the manner in which effective collaboration is measured remains open to interpretation. Calls for service to police involving severe mental illness have increased and have caused a notable impact on police, the public, and PMI themselves (Hensen et. al, 2016).

Professional humility is imperative. Understanding gaps in knowledge may better enable police members to deliver client-centred care. The mental health data collected by police may be misleading due to police agencies having an obvious primary focus on public safety and crime (Rosenbaum et al., 2017). Police members are tasked with mitigating both criminal and social crises. A criminal crisis may be straightforward given police members' subject matter expertise in same. Mitigating a social crisis as the result of acute mental illness symptomology may be beyond the comfort level of the police

member. Police members catch 'the bad guy', solve crimes, and are not largely known for mitigating mental health crises.

Communities with strong mental health and police collaboration have reduced mental health apprehensions, arrests, jail time, and lawsuits resulting in cost savings for both stakeholders (Cowell, Hinde, Broner, & Aldridge, 2013). The results of this research identified an informal partnership (Separate Response Model) as being more effective in diverting PMI away from emergency departments than a formal partnership (Knoxville Model). Formal training may not be as effective in comparison to stakeholder partnerships between police services and community/government services.

The Albuquerque Police Department's Crisis Intervention Team (CIT) training comprises three themes: inclusive collaboration, training, and coordinated response (Rosenbaum et al., 2017). All of these themes are informally used in the PACT partnership between EPS and AHS.

5.1 Inclusive collaboration

Effective stakeholder communication is imperative in collaborative efforts. EPS and AHS share a memorandum of understanding wherein both stakeholders are able to disclose relevant information to one another provided an element of risk exists, for pragmatic purposes. The Health Information Act of Alberta (2000) provides custodians of healthcare information to disclose select limited information to a police service if "…the disclosure will protect the health and safety of Albertans" (Health Information Act of Alberta, 2000, p. 30). EPS may not frivolously request health information on a subject before or following their involvement. AHS partners may not inquire into confidential police information if no clinical indication to do so is present.

PACT began in Edmonton in 2004 as a one-team pilot program. Since that time, the program has expanded to a total of seven teams working alternate shifts, providing near 24-hour coverage to the City of Edmonton. The PACT program has evolved in response to varying and newly identified needs for each respective stakeholder. Initially PACT operated in a secondary response capacity. PACT members would be consulted by on-scene patrol members or would be sent police files flagged for review. AHS administrators noted missed opportunities to engage PMI in services at the time of most need and EPS administrators noted excessive MHAA wait times in the ED. The mandate of PACT evolved into a first-responder capacity. As of September 2016, EPS policy changed, requiring all potential MHAA to be vetted by PACT or US (P. Coulson, Director of Urgent and Intensive Services, personal communication, June 14, 2017).

Similarly, a Mobile Crisis Rapid Response Team (MCRRT) was created in 2013 in the city of Hamilton, Ontario. MCRRT comprises a partnership between police and mental health that responds to emergency calls for service as first responders (Fahim, Semovski, & Younger, 2016). The aim of MCRRT is to divert PMI from unnecessary ED presentations and connect them to safe and effective community resources (Fahim et al., 2016). Bringing the right services to the right people at the right time can result in effective client care and decreased financial cost to both healthcare and police stakeholders.

A point of caution must be raised not to equate diversion from the ED as the ultimate goal. An excessive focus on ED diversion may result in acuity of illness and risk potential being minimized, if not overlooked entirely. A presentation to the ED via MHAA is intended to ensure a clinical assessment as a means to ensure access to

potential treatment for PMI. A further point of caution would be for police members avoiding 'dictating care' for PMI. Police members feared that PMI would not get the care they needed upon presentation to an ED (Kubiak et al., 2017; Wood & Watson, 2017). Inpatient admission does not equate to proper clinical treatment. Dependent on the circumstances of the PMI, admission to an inpatient setting may be contraindicated. Receiving help is not contingent on being admitted to an inpatient setting. Moreover, what may present as a mental health crisis at face value may in fact be the manifestation of a life-threatening medical illness. Delirium, a secondary condition to one or more underlying medical complications, may be disregarded in absence of a formal mental health history leading to poor health outcomes if not death. A sudden dramatic departure from baseline presentation may be indicative of an underlying and potentially fatal organic pathology. In police education, an overemphasis on mental health recognition may be detrimental. This may limit the amount of information police members would collect, potentially overlooking an obvious medical concern and rationalizing the behavior from a mental health perspective.

The results of this research identified a discrepancy in diversion rates from the ED between the Separate Response Model (informal partnership between Urgent Services with Patrol) and the Knoxville Model (formal partnership between AHS and EPS). Statistical significance, albeit with a less robust chi-square analysis, indicating an increased likelihood of diversion from the ED was present with the involvement of the Separate Response Model (Urgent Services with Patrol). Given the discrepancy between diversion from ED rates between the Separate Response Model (Urgent Services with Patrol) and the Knoxville Model (PACT), further issues become apparent.

There may be a difference between a mental health crisis and a psychiatric emergency. An emergency with a psychiatric etiology requires immediate response whereas a mental health crisis may be less acute in comparison, requiring a timely response. The lack of terminology in the literature to delineate between a mental health crisis and a psychiatric emergency is concerning. There is currently no language present to describe the two terms. In the event Urgent Services would receive a call requiring immediate response, it would be deferred to EPS. Should the call to Urgent Services not require an immediate response, but a timely response – Urgent Services would be able to follow up with EPS, if a likelihood for risk or MHAA was present. Police members have so many responsibilities with complex cases beyond criminal behavior. They are tasked with protecting public safety and have limited resources available. Judgment calls need to be made in a timely manner with dire consequences if the police members are wrong.

As a first-responder service, it could be assumed a mental health related call for service to EPS would fit a higher acuity level. The mental health call for service could be dispatched to an available PACT team. Given the assumed heightened acuity level the opportunity for de-escalation followed by safe and effective community stabilization may be limited. By virtue of a higher acuity call for service, the lack of safe and effective means of stabilization may result in a MHAA. The discrepancy between the disposition outcomes of the Separate Response Model (Urgent Services with Patrol) and the Knoxville Model (PACT) may not be due to clinical expertise, rather due to the nature of acuity in the calls for service.

5.2 Mental Health Training for Police

Fahim et al (2016) noted the 40-hour CIT training MCRRT police members receive may not always adequately prepare its police members in de-escalation techniques. Significant variations in content, design, and delivery of mental health training for non-mental health trained professionals resulted in a lack of clarity regarding best practice (Booth et al., 2017). Interestingly in Edmonton, PACT police members do not receive any formal mental health training. Potential PACT police members are selected based on individual merit, seniority, and personal suitability for the position. Moreover, an identified interest in addictions and mental health must be present. Interest is first shown by volunteering for coverage for when a regular PACT police member is away from their regular shift rotation. Education is done on an informal basis, with the PACT mental health therapist providing teaching prior to a call for service and enabling mutual reflective practice to occur following a successful disposition. Police stakeholders would incur training costs in CIT style education. Informal education for the police member through either a formal or informal partnership is done at no out-of-pocket cost for either stakeholder. The police member receives informal education from their mental health clinician through the lived experience of working in a joint partnership.

Knowles (1968) theory of adult learning principles described adult-learners as autonomous, goal-oriented, seeking relevant learning, having life experience, are practical in nature, and need respect. Self-selection through volunteering is done by the potential PACT police member, providing autonomy. Potential PACT police members are goal-driven to gain an increase in evidence-informed knowledge, to later incorporate into evidence-informed practice during mental health calls for service. A longstanding

healthy collaborative partnership between EPS and AHS fosters this development. Conversely, PACT mental health therapists gain a base of knowledge and understanding of the professional world of their police partners.

The tenure for a PACT police member is limited to four years. The police position in PACT is deemed a 'preferred position.' Police members start their careers in the 'non-preferred position' of patrol. Within five years of starting their careers, police members may apply for an internal transfer to another area within the service. Select non-patrol positions within EPS are regarded as competitive and thus, 'preferred positions.' The four-year time period provides the PACT member to become well versed in assessment skills, knowledge of illness, and knowledge of community resources other than simply an ED presentation. The four-year tenure in the 'preferred position' of PACT is limited. Following the end of their PACT tenure, the police member would then transfer back to a 'non-preferred position' for a pre-established timeframe before becoming eligible for applying for another 'preferred position.' During the four-year time period, the PACT member informally disseminates their knowledge and skill to EPS patrol members. On departure from their tenure at PACT the police member retains skills and knowledge, thereby further disseminating skill and knowledge in their respective postings. This informal knowledge dissemination may account for a greater number of PMI being diverted from the ED through the Separate Response Model to safe and effective stabilization through prompt access to community-based services.

5.3 Coordinated Response

Balfour, Winsky, & Isely (2017) noted that the Tucson Mental Health Investigative Support Team (MHIST) police members drive unmarked cars and wear

plain clothes in an effort to mitigate stigma and likelihood of behavioral escalation that may occur from seeing a uniformed police member. Symptoms of severe mental illness or acute substance intoxication, may include paranoia and persecutory ideations. PMI who are paranoid due to their illness may very likely be suspicious of the legitimacy of a plain clothes police member. A plain clothes police response may decrease the optics of police presence, yet it can equally breed further paranoia with PMI. The potential for a paranoid client to request a uniformed police member's badge and photo identification can be diagnostically significant. The presence of persecutory ideations may be a key factor in a PMI approaching police assistance. PMI may be comforted by the presence of a uniform as it can be associated with safety and security. Moreover, a plain clothes approach may indirectly contribute to the existing stigma of mental health, inferring to PMI that they are treated in a manner different than the rest of the general population. Stigma may be as equally prevalent to police services as it is for people living with mental illness. Health is health, be it physical health or mental health.

PACT operates year-round with operational hours between 0700-0200. During the five-hour lapse, Urgent Services staff remain available for immediate consultation for police. During this time, Urgent Services staff fields calls from the general community in addition to calls from police. During acute periods, calls to PACT may be diverted to Urgent Services as one PACT team on duty may be unable to adequately field the calls for service. Calls diverted from PACT to Urgent Services are non-emergent and have a police presence. Although not a formal site, an informal 'no refusal' policy with regard to phone consultation exists. Wood & Watson (2017) noted collaborative partnerships

that include co-responder teams and a ‘hotline’ staffed by mental health professionals for use by police when PMI are encountered in patrol.

Police are tasked with ending a call for service in a safe manner. Regardless of the etiology of the psychiatric symptoms, the presence of symptoms of illness is the factor requiring action. Interestingly neither admission nor discharge rates from hospital are correlated to substance use, or no substance use. The results of the research are reassuring as despite the reason, if a PMI requires an admission – they will receive an admission regardless of substance use. The research findings may serve to provide reassurance to both mental health and police stakeholders. A substance related MHAA would have received the same level of care as would a non-substance related MHAA as neither the presence nor absence of substance use presented as a factor influencing either admission or discharge. Equally it should be reiterated that the ED may not be an appropriate disposition for a PMI. Attendance to an ED will provide an assessment and alleviate the police member from liability, yet the same assessment may be provided by a mental health profession at the time of crisis, at the home of the PMI. A mental health assessment at the home of the PMI may be diagnostically telling, compared to the same assessment being completed in the controlled environment of the ED.

Horspool, Drabble, & O’Cathain (2016) remarked no universal approach for mental health and police collaboration exists and the geography and population size of the service area should be considered. In a systematic scoping review, Parker et al., (2018) noted thirteen distinct models of interagency collaboration were identified albeit similarities occurred within agency composition. Working within ones means is imperative. MHIST has a focus on sharing information with healthcare providers rather

than requesting information (Balfour et al., 2017). Co-responding teams were 2.3 times more likely to bring PMI to ED compared to police only teams (Lamanna et al., 2018) although this is indicative of recognition of symptoms of illness, not necessarily a clinically warranted decision.

Research findings indicated statistical significance of discharge from the ED in general, albeit done via the less robust chi-square analysis. The ED is a universal, no-refusal, consistently accessible resource. The statistical prevalence of significant numbers of PMI being discharged from the ED post MHAA suggests a need for disposition options apart from the ED itself.

5.4 Implications and Future Research Opportunities

For the purposes of this research, secondary data was analyzed. Future research opportunities exist in research based on intentional data accumulation as compared to analyzing already existing data. The implication for same would allow for a variety of focused research questions specific to the mental health and police partnership.

An area for future research could examine primary reasons behind a MHAA, beyond the current substance or non-substance related MHAA. Additionally, future research may examine the prevalence of physical health related MHAA. Symptoms of physical illness (e.g. delirium, hypoglycemia) can mirror psychiatric-based symptoms of illness and can be life-threatening and potentially overlooked in the absence of a confirmed mental health diagnosis.

Destabilizing factors including gender/gender identity, age, employment, relationship, financial, living situation, chronic medical conditions, chronic pain,

substance use, and prevalence of a previous mental health diagnosis could assist in identifying common and recurrent factors involved in MHAA.

Future research may provide quantitative context to the exact etiology of substance related MHAA. Prevalence of methamphetamine use and substance induced psychosis resulting in MHAA could be better tracked. Detailed and current reasons for apprehension may identify accessibility and treatment gaps.

The research findings support the existence of informal partnerships working in collaborative and mutually beneficial relationships. Positive research findings may act as a catalyst in spurring new and expanded stakeholder engagement. Evaluative research of urban areas with more than one police service may be examined. Future research in this area may identify successes and areas for growth between competing police services. Police contact with PMI begins at the police dispatcher level whereas literature surrounding mental health training largely focuses on the front-line police member (Ritter et al., 2011). Future research opportunities specific to mental health awareness and recognition may occur amongst non-front-line police members.

This study may be replicated with more current data, identifying emerging trends and providing a benchmark for future evaluation of new initiatives. Moreover, standardized data tracking across existing mental health and police partnerships would provide a means for program evaluation. Data tracking over an extended timeframe would facilitate in identification of current and evolving trends.

Future research opportunities may serve to differentiate primary medical reasons for apprehension comparative to primary psychiatric reasons for apprehension. Should police respond to a recent or suicide attempt in progress, there may be limited – if any –

options for safe and effective stabilization. Overdose ingestion and self-harming attempts would require medical investigation and intervention not readily accessible in a community setting. A polypharmacy overdose cannot be mitigated at the residence of a PMI as medical intervention and testing are required to clarify the extent of any physical damage.

Child and adolescent psychiatry is pragmatically different than adult psychiatry. Diagnoses, pharmacotherapies, and community resources differ in comparison to the adult world. In review of the literature, successes have been identified in the field of addiction and mental health yet there are no distinct mental health and police partnerships.

Apart from quantitative research opportunities, qualitatively based studies may provide an alternate interpretation of successes. The phenomenology of police members who have worked in mental health and police partnerships may yield useful information not found in a traditional quantitative approach. Comfort levels of police members dealing with complex calls for service involving PMI may be explored. The lived-experience of the mental health clinician in a joint partnership may generate new perspectives on mental health and police collaboration.

Further to qualitative research opportunities the lived experience of the PMI apprehended by police, working in joint partnerships could be explored. Clarity could be provided if police members in a mental health partnership are regarded as the same, or different in comparison to their colleagues working in a patrol capacity.

There is a gap in the literature regarding the evaluation of training. Although Krameddine et al. (2013) noted a change in behaviors, not attitudes following

standardized patient scenario-based training, this research was conducted with EPS patrol members – not EPS members in a formal mental health and police partnership. Given the aforementioned lack of change in attitudes, this is an area for further exploration. Outcomes of mental health training for police members may be multifaceted. The length of calls for service involving PMI, attitudes toward PMI and healthcare providers, and stabilization options apart from linkage to community resources or presentations to the ED could be explored.

5.5 Limitations and Strengths

The major limitation of the analysis included the use of chi-square analysis. Although a less robust data analysis measure, the chi-square analysis was accurate at both the 0.05 and 0.001 marks for the first two research questions. A major limitation of secondary analysis is the researchers analyzing the data are typically not the same people who are gathering the data (Cheng & Phillips, 2014). Specific to the first research question, the disposition of 61 out of 2568 people apprehended via a MHAA was unknown. The unknown disposition portion accounts for less than 3% of all of the MHAA.

A major limitation of the study is the inclusion of child and adolescent MHAA in the data. Although US and PACT provide limited direction to police members involved in child and adolescent calls for service, the mandate of US and PACT is to serve the adult population. For the duration of 2016, all children and adolescents apprehended in Edmonton and surrounding area under the Mental Health Act, would be conveyed to the Stollery Emergency at the University of Alberta Hospital for further assessment. Despite

not being brought to the Adult ED, AHS Protective Services members would still capture MHAA data included in this study.

When PMI are apprehended on a MHAA, they are to be conveyed to a *designated facility* per the Mental Health Act of Alberta. *Designated facilities* are typically hospitals delegated to provide care for PMI who are apprehended and detained via the Mental Health Act of Alberta. They are most often found in larger urban settings. The City of Edmonton is surrounded by smaller communities where policing services are provided by the RCMP. When PMI are apprehended by the RCMP in rural areas surrounding Edmonton, they are conveyed to one of the four designated facilities in Edmonton. The secondary data used in this study does not reflect the presence of, or dispositions of PMI apprehended by the RCMP and conveyed to one of the four designated facilities in Edmonton.

The major strength of this research has been the novel approach of analyzing secondary data within a year-long period. The level of statistical significance is strong. Despite the data for the first two research question was checked at the .05 level, the data remains statistically significant at the .001 level, meaning the research findings have an accuracy of 99.9%. To date there has been no published research on two collaborative but independent models of mental health and police collaboration within a large urban setting.

5.6 Knowledge Dissemination Strategy

A Knoxville Model collaborative partnership involves two primary stakeholders: in the case of this research, AHS and EPS. Equally, the Separate Response Model shares the same two primary stakeholders. The Knoxville Model (PACT) is a formal and

structured partnership between AHS and EPS. The Separate Response Model involves US assisting EPS, or EPS consulting US on an as needed basis. Positive research outcomes would be of interest to both an AHS and EPS audience. Cotton and Coleman (2010) note the Knoxville Model collaborative partnership is the preferred model of law enforcement and mental health partnership in Canada. The existence of similar Knoxville Model partnerships in urban settings would enable this research to be shared. Separate Response Models may be more informal collaborative partnerships, with each stakeholder identifying a need and a benefit of having a professional relationship with the other. External validity is strengthened as the research would have the ability to be generalized to other Canadian urban settings with established Knoxville Model and Separate Response Models. The research could not be generalized to rural settings. Urban settings benefit from increased access to addictions and mental health services. Healthcare and law enforcement collaboration remains a new concept in mental health care delivery. Post-secondary audiences of Nursing, Psychiatric Nursing, Social Work, Occupational Therapy, Medicine, Psychology and Police Sciences could be targeted in a grass-roots approach. Psychiatry Grand Rounds and Nursing Rounds at AHS facilities would be approached. Patient advocacy groups including the Canadian Mental Health Association and the Schizophrenia Society of Alberta would undoubtedly voice an interest in positive research findings resulting in improved care for PMI. Positive research findings would validate the work done by AHS Urgent and Intensive Services portfolio. The research would appeal to the broad span of healthcare journals and, law enforcement and policing journals. The research could be presented at one of the regular public Edmonton Police Commission meetings. Research findings may encourage

further research analysis of secondary data sources. The benefit of accessing secondary data is to ensure the transformation of data to knowledge. Evidence informed practice cannot be implemented without first examining evidence informed knowledge.

Chapter 6 - Conclusion

This study explored mental health and police collaboration and its effect on diverting PMI away from the ED. This study examined the effectiveness of mental health clinician collaboration with police at the time of crisis. Furthermore, research findings indicated the presence of a mental health clinician positively affecting both inpatient rates following a MHAA, and diversion rates from the ED, circumventing the need for a MHAA. Research findings indicated the informal Separate Response Model (Urgent Services) as having a greater ability than the formal Knoxville Model (PACT) partnership in diverting PMI from the ED through safe and effective community stabilization. Lastly research findings did not indicate any statistical significance in either inpatient admissions, or discharges from the ED, between substance and non-substance related MHAA.

The first research question comprised every MHAA (n = 2479) in the 2016 calendar year brought to one of four local EDs of *designated facilities* per the Mental Health Act of Alberta. A high number of PMI diverted from the ED to community-based resources may indicate a need to further develop existing community resources. Treatment is not dependent on an inpatient to hospital. Future research opportunities may include examining the success of community resources in stabilizing PMI.

The second research question comprised every call for service (n = 9078) involving police with either a formal (PACT) partnership, or an informal (Urgent

Services) partnership from April – December 2016. Addiction and mental health related calls for service involving police may vary greatly in acuity. A call initiated to police could be assumed to be more acute than a call initiated to a mental health 'hotline.' This could account for the difference in diversion frequency between Urgent Services involvement and PACT involvement. Further research opportunities may include examining diversion rates within specific partnerships. Exploring whether an established clinician-police relationship influences diversion rates from the ED compared to a non-established clinician-police member relationship. Qualitative research opportunities exist to explore the lived experience of both clinician and police members in mental health and police partnerships.

The third research question comprised every MHAA (n = 984) from August – December, 2016. Substance use did not have any relation on admission or discharge rates following MHAA. It would be presumed the etiology behind the symptoms did not factor into the decision to admit or discharge home. Mental health awareness is an increasing trend in the media and popular culture. Addictions treatment may be a polarizing topic, incurring a level of stigma once blatantly directed toward mental illness. Future research opportunities exist in exploring the prevalence of trauma affecting substance use within the MHAA population.

EPS patrol, PACT, and US are not identical services. A MHAA is often used as a last resort, when no options for safe and effective community stabilization are present. It could be feasible that a lack of safe and effective community resources would result in increased inpatient admission rates. Regardless this is a gap in service that is not being tracked in either a sufficient or efficient manner. Positive research findings from the

Separate Response Model indicated responding police members were able to collaborate with mental health clinicians to ensure timely and appropriate care was provided for PMI in crisis. By virtue of the Separate Response Model being an informal partnership, the success demonstrated in this study may be indicative of future successes with informal partnerships. Formal training in addictions and mental health may be beneficial, yet the findings of this research noted in the absence of formal training, positive results are attainable by collaboration versus formal education. This assertion is done in absence of evidence showing what the best practices are for police members involved with PMI. This is a complex dilemma to which little attention is paid. Police members are not subject matter experts in addictions and mental health, yet continue to manage complex calls for service with minimal formal guidance. The ultimate goal of this research is to facilitate the improvement of care for PMI.

References

Augustin, D., & Fagan, T.J. (2011). Roles for mental health professionals in critical law enforcement incidents: an overview. *Psychological Services, 8*(3), 166-177.

Bachrach, L.L. (1983). Deinstitutionalization. San Francisco, CA: Jossey-Bass.

Baillergeau, E. (2014). Governing public nuisance: Collaboration and conflict regarding the presence of homeless people in public spaces of Montreal. *Critical Social Policy, 34*(3), 354-373.

Balfour, M.E., Winsky, J.M., & Isely, J.M. (2017). The Tucson mental health investigative support team (MHIST) model: A preventative approach to crisis and public safety. *Psychiatric Services, 68*2), 211-212.

Barker, V., Taylor, M., Kader, I., Steward, K., & Fevre P.L. (2011). Impact of crisis resolution and home treatment services on user experience and admission to psychiatric hospital. *Psychiatrist, 35*(3), 106-110.

Bittner, E. (1967). Police discretion in emergency apprehension of mentally ill persons, *Social Problems, 14*, 278-292.

Bonfine, N., Ritter, C., & Munetz, M.R. (2014). Police officer perceptions of the impact of Crisis Intervention Team (CIT) programs. *International Journal of Law and Psychiatry, 37*, 341-350.

Bonkiewicz, L., Green, A.M., Moyer, K., & Wright, J. (2014). Left alone when the cops go home: evaluating a post-mental health crisis assistance program. *Policing, 37*(4), 762-778.

Booth, A. SA., Hughes-Morley, A., Mitchell, N., Wright, K., Scott, W., McDaid, C. (2017). Mental health training programmes for non-mental health trained professionals coming into contact with people with mental ill health: A systematic review of effectiveness. *BMC Psychiatry, 17*(196), 1-17.

Borum, R., Deane, M.W., Steadman, H.J., & Morrissey, J. (1998). Police perspectives on responding to mentally ill people in crisis: perceptions of program effectiveness. *Behavioral Sciences and the Law, 16*, 393-405.

Boscarato, K., Lee, S., Kroshel, J., Hollander, Y., Brennan, A., & Warren, N. (2014). Consumer experience of formal crisis-response services and preferred methods of crisis intervention. *International Journal of Mental Health Nursing, 23*, 287-295.

Boyd, J., Boyd, S., & Kerr, T. (2015). Visual and narrative representations of mental health and addiction by law enforcement. *International Journal of Drug Policy, 26*, 636-644.

Bradbury, J.F., Ireland, M., & Stasa, H. (2014). Mental health emergency transport: The pot-holed road to care. *Ethics and Law, 6*, 348-351.

Broussard, B., McGriff, J.A., Demir Neubert, B.N., D'Orio, B., & Compton, M.T. (2010). Characteristics of patients referred to psychiatric emergency services by crisis intervention team police officers. *Community Mental Health Journal, 46*, 579-584

Brown Cross, A., Mulvey, E.P., Schubert, C.A., Griffin, P.A., Filone, S., Winckworth-Prejsnar, K., DeMatteo, D., & Heilbrun, K. (2014). An agenda for advancing research on crisis intervention teams for mental health emergencies. *Psychiatric Services, 65*(4), 530-536.

Canada, K.E., Angell, B., & Watson, A.C. (2012). Intervening at the entry point: Differences in how CIT trained and non-CIT trained officers describe responding to mental health-related calls. *Community Mental Health Journal, 48*, 746-755.

Canada, K.E., Angell, B., & Watson, A.C. (2010). Crisis intervention teams in Chicago: Successes on the ground. *Journal of Police Crisis Negotiations, 10*, 86-100.

Chappell, D. (2010). From sorcery to stun guns and suicide: the eclectic and global challenges of policing and the mentally ill. *Police Practice and Research, 11*(4), 289-300.

Charette, Y., Crocker, A.G., & Billette, I. (2011). The judicious judicial dispositions juggle: Characteristics of police interventions involving people with a mental illness. *Canadian Journal of Psychiatry, 56*(11), 677-685.

Cheng, H.G., & Phillips, M.R. (2014). Secondary analysis of existing data: opportunities and implementation. *Shanghai Archives of Psychiatry, 26*(6), 371-375.

Chopko, B.A. (2011). Walk in balance: Training crisis intervention team police officers as compassionate warriors. *Journal of Creativity in Mental Health, 6*, 315-328.

Clayfield, J.C., Fletcher, K.E., & Grudzinskas, A.J. (2011). Development and validation of the mental health attitude survey for police. *Community Mental Health Journal, 47*, 742-751.

Coleman, T. G., & Cotton, D.H. (2010). Reducing risk and improving outcomes of police interactions with people with mental illness. *Journal of Police Crisis Negotiations*, 10, 39-57.

Compton, M.T., & Chien, V.H. (2008). Factors related to knowledge retention after crisis intervention team training for police officers. *Psychiatric Services, 59*(9), 1049-1051.

Compton, M.T., Bakeman, R., Broussard, B., Hankerson-Dyson, D., Husbands, L., Krishan, S., Stewart-Hutto, T., D'Orio, B.M., Olivia, J.R., Thompson, N.J., & Watson, A.C. (2014). The police-based crisis intervention team (CIT) model: I. Effects on officers' knowledge, attitudes, and skills. *Psychiatric Services, 65*(4), 517-522.

Compton, M.T., Bakeman, R., Broussard, B., Hankerson-Dyson, D., Husbands, L., Krishan, S., Stewart-Hutto, T., D'Orio, B.M., Olivia, J.R. Thompson, N.J., & Watson, A.C. (2014). The police-based crisis intervention team (CIT) model: II. Effects on level of force and resolution, referral and arrest. *Psychiatric Services, 65*(4) 523-529.

Compton, M.T., Broussard, B., Hankerson-Dyson, D., Krishan, S., & Stewart-Hutto, T. (2011). Do empathy and psychological mindedness affect police officers' decision to enter crisis intervention team training? *Psychiatric Services, 62*(6), 632-638.

Compton, M.T., Broussard, B., Reed, T.A., Crisafio, A., & Watson, A.C. (2015). Surveys of police chiefs and sherrifs and of police officers about CIT programs. *Psychiatric Services, 66*(7), 760-763.

Compton, M.T., Demir Neubert, B.N., Broussard, B., McGriff, J.A., Morgan, R., & Olivia, J.R. (2011). Use of force preferences and perceived effectiveness of actions among crisis intervention team (CIT) police officers and non-CIT officers in an escalating psychiatric crisis involving a subject with schizophrenia. *Schizophrenia Bulletin, 37*(4), 737-745.

Coleman, T. G., & Cotton, D.H. (2010). Reducing risk and improving outcomes of police interactions with people with mental illness. *Journal of Police Crisis Negotiations, 10*, 39-57.

Coleman, T., & Cotton, D. (2014). TEMPO: A contemporary model for police education and training about mental illness. *International Journal of Law and Psychiatry, 37*, 325-333.

Cotton, D. (2004). The attitudes of Canadian police officers toward the mentally ill. *International Journal of Law and Psychiatry, 27*, 135-146.

Cotton, D., & Coleman, T.G. (2010). Canadian police agencies and their interactions with persons with a mental illness: a systems approach. *Police Practice & Research, 11*(4), 301-314.

Cotton, M.A., Johnson, S., Bindman, J., Sandor, A., White, I.R., Thornicroft, G., Nolan, F., Pilling, S., Hoult, J., McKenzie, N., & Bebbington, P. (2007). An investigation of factors associated with psychiatric hospital admission despite the presence of crisis resolution teams. *BMC Psychiatry*, 7, 52.

Cowell, A.J., Hinde, J.M., Broner, N., & Aldridge, A.P. (2013). The impact on taxpayer costs of a jail diversion program for people with serious mental illness. *Evaluation and Program Planning, 41*, 31-37.

Deane, M.W., Steadman, H.J., Borum, R., Veysey, B.M., & Morrissey, J.P. (1999). Emerging partnerships between mental health and law-enforcement. *Psychiatric Services, 50*(1), 99-101.

Demir, B., Broussard, B., Goulding, S.M., & Compton, M.T. (2009). Beliefs about causes of schizophrenia amongst police officers before and after crisis intervention training. *Community Mental Health Journal, 45*, 385-392.

Dupont, R., & Cochran, S. (2000). Police response to mental health emergencies – Barriers to change. *Journal of the American Academy of Psychiatry and the Law, 28*(3), 338-344.

Durbin, J., Lin, E., & Zaslavska, N. (2010). Police-citizen encounters that involve mental health concerns: Results of an Ontario police services survey. *Canadian Journal of Community Mental Health, 29*, 53-71.

Ellis, H.A., (2014). Effects of a crisis intervention team (CIT) training program upon police officers before and after crisis intervention team training. *Archives of Psychiatric Nursing, 28*, 10-16.

El-Mallakh, P.L., Kiran, K., & El-Mallakh R.S. (2014). Costs and savings associated with implementation of a police crisis intervention team. *Southern Medical Journal*, 10(76), 391-395.

Fahim, C., Seovski, V., & Younger, J. (2016). The Hamilton mobile crisis rapid response team: A first-responder mental health service. *Psychiatric Services, 67*(8), 929.

Forchuk, C., Jensen, E., Martin, M-L., Csiernik, R., & Atyeo, H. (2010). Psychiatric crisis services in three communities. *Canadian Journal of Community Mental Health. 29*, 73-86.

Greenstone, J.L. (2004). Communicating effectively for successful hostage negotiation and crisis intervention. *Journal of Police Crisis Negotiations, 4*(2), 43-52.

Gregory, M.J., & Thompson, A. (2013). From here to recovery. One service user's journey through a mental health crisis: Some reflections on experience, policy and practice. *Journal of Social Work Practice, 27*(4), 455-470.

Grubb, A. (2010). Modern day hostage (crisis) negotiation: The evolution of an art form within the policing arena. *Aggression and Violent Behavior, 15*, 341-348.

Grudzinskas, A.J.J., Clayfield, J.C., Roy-Bujnowski, K., Fisher, W.H., & Richardson, M.H. (2005). Integrating the criminal justice system into mental health service delivery: The Worcester diversion experience. *Behavioral Sciences & the Law, 23*(2), 277-293.

Hanafi, S., Bahora, M., Demir, B.N., & Compton, M.T. (2008). Incorporating crisis intervention team (CIT) knowledge and skills into the daily work of police officers: A focus group study. *Community Mental Health Journal, 44*, 427-432.

Hartford, K., Carey, R., & Mendonca, J. (2006). Pre-arrest diversion of people with mental illness: Literature review and international survey. *Behavioral Sciences & the Law, 24*(6), 845-856.

Hartford, K., Heslop, L., Stitt, L., & Hoch, J.S. (2005). Design of an algorithm to identify persons with mental illness in a police administrative database. *International Journal of Law & Psychiatry, 28*(1), 1-11.

Hasselberg, N., Grawe, R.W., Johnson, S., Saltyte-Benth, J., & Ruud, T. (2013). Psychiatric admissions from crisis resolution teams in Norway: A prospective multicentre study. *BMC Psychiatry, 13*, 117.

Health Information Act of Alberta (2000). Retrieved from www.qp.alberta.ca/documents/Acts/H05.pdf

Helfgott, J.B., Hickman, M.J., & Labossiere, A.P. (2016). A descriptive evaluation of the Seattle police department's crisis response team officer/mental health professional partnership pilot program. *International Journal of Law and Psychiatry, 44*, 109-122.

Hensen, M.J., de Mooij, L.D., Theunissen, J., Dekker, J., Willemsen, M., Zoeteman, J., Peen, J., & de Wit, M.A.S. (2016). Pathways through care of severely mentally ill individuals experiencing multiple public crisis events: A qualitative description. *BMC Psychiatry, 16*(84), 1-10.

Hoffman, R., Hirdes, D., Brown, G.P., Dubin, J.A., & Barbaree, H. (2016). The use of a brief mental health screener to enhance the ability of police officers to identify persons with serious mental disorders. *International Journal of Law and Psychiatry* (in press).

Hollander, Y., Lee, S.J., Tahtalian, S., Young, D., & Kulkarni, J. (2012). Challenges relating to the interface between crisis mental health clinicians and police while engaging with people with a mental illness. *Psychiatry, Psychology and Law, 19*(3), 402-411.

Holmes, D. (2014). New initiative aims to tackle shortfalls in mental health crisis care. *The Lancet Psychiatry, 1*(1), 15-16.

Horspool, K., Drabble. S.J., & O'Cathain, A. (2016). Implementing street triage: A qualitative study of collaboration between police and mental health services. *BMC Psychiatry, 16*(313), 1-11.

Huppert, D., & Griffiths, M. (2015). Police mental health partnership project: Police ambulance crisis emergency response (PACER) model development. *Australasian Psychiatry, 23*(5), 520-523.

Kirst, M., Francome Pridham, K., Narrandes, R., Matheson, F., Young, L., Niedra, K., & Stergiopoulos, V. (2015). Examining implementation of mobile, police-mental health crisis intervention teams in a large urban center. *Journal of Mental Health, 24*(6), 369-374.

Kisely, S., Campbell, L.A., Peddle, S., Hare, S., Pyche, M., Spicer, D., Moore, B. (2010). A controlled before-and-after evaluation of a mobile crisis partnership between mental health and police services in Nova Scotia. *Canadian Journal of Psychiatry, 55*(10), 662-668.

Knowles, M.S. (1968). Andragogy, not pedagogy. *Adult Leadership, 16*(10), 350-352, 386.

Kohrt, B.A., Blasingame, E., Compton, M.T., Dakana, S.F., Dossen, B., Lang, F., Strode, P., & Cooper, J. (2015). Adapting the crisis intervention team (CIT) model of police-mental health collaboration in a low-income, post-conflict country: Curriculum development in Liberia, West Africa. *American Journal of Public Health, 105*(3), e73-e80.

Krameddine, Y.I., DeMarco, D., Hassel, R., & Silverstone, P.H. (2013). A novel training program for police officers that improves interactions with mentally ill individuals and is cost-effective. *Frontiers in Psychiatry, 4*(9), 1-10.

Krishan, S., Bakeman, R., Broussard, B., Cristofaro, S.L., Hankerson-Dyson, D., Husbands, L., Watson, A.C., & Compton, M.T. (2014). The influence of neighborhood characteristics on police officers' encounters with persons suspected to have a serious mental illness. International *Journal of Law and Psychiatry, 37*(4), 359-369.

Kubiak, S., Comartin, E., Mlanovic, E. Bybee, D., Tillander, E., Rabaut, C., Bisson, H., Dunn, L.M., Bouchard, M.J., Hill, T., & Schnieder, S. (2017). Countywide implementation of crisis intervention teams: Multiple methods, measures, and sustained outcomes. *Behavioral Science Law, 35,* 456-469.

Laing, R., Halsey, R., Donohue, D., Newman, C., & Cashin, A. (2009). Application of a model for the development of a mental health service delivery collaboration between police and the health service. *Issues in Mental Health Nursing, 30,* 337-341.

Lamanna, D., Shapiro, G.K., Kirst, M., Matheson, F.I., Nakhost, A., & Stergiopoulos, V. (2017). Co-responding police-mental health programmes: Service user experiences and outcomes in a large urban centre. *International Journal of Mental Health Nursing, 27,* 891-900.

Lamb, H.R., Shaner, R., Elliott, D.M., DeCuir, W.J., & Foltz, J.T. (1995). Outcome for psychiatric patients seen by an outreach police-mental health team. *Psychiatric Services, 46*(12), 1267-1271.

Lamb, H.R., Weinberger, L.E., & DeCuir, W.J. (2002). The police and mental health. *Psychiatric Services, 53*(10), 1266-1271.

Lamb, H.R., Weinberger, L.E., & Gross, B.H. (2004). Mentally ill persons in the criminal justice system: Some perspectives. *Psychiatric Quarterly, 75*(2), 107-126.

Livingston, J.D., Desmarais, S.L., Verdun-Jones, S., Parent, R., Michalak, E., & Brink, J. (2014). Perceptions and experiences of people with mental illness regarding their interactions with police. *International Journal of Law and Psychiatry, 37*, 334-340.

Lord, V.B., & Bjerregaard, B. (2014). Helping persons with mental illness: Partnerships between police and mobile crisis units. *Victims & Offenders, 9*(4), 455-474.

Lurigio, A.J. (2000). Persons with serious mental illness in the criminal justice system: Background, prevalence, and principles of care. *Criminal Justice Policy Review, 11*(4), 312-328.

Lurigio, A.J., & Watson, A.C. (2010). The police and people with mental illness: New approaches to a longstanding problem. *Journal of Police Crisis Negotiations, 10*, 3-14.

Martinez, L.E. (2010). Police departments' response in dealing with persons with mental illness. *Journal of Police Crisis Negotiations, 10*, 166-174

Matusitz, J. (2013). Interpersonal communication perspectives in hostage negotiation. *Journal of Applied Security Research, 8*(1), 24-37.

McGriff, J.A., Broussard, B., Demir Neubert, B.N., Thompson, N.J., & Compton, M.T. (2010). Implementing a crisis intervention team (CIT) police presence in a large international airport setting. *Journal of Police Crisis Negotiations, 10*, 153-165.

McKenna, B., Furness, T., Oakes, J., & Brown, S. (2015). Police and mental health clinician partnership in response to mental health crisis: A qualitative study. *International Journal of Mental Health, 24*(5), 386-393.

McLeod, L.C., Thomas, S.D.M., & Kesic, D. (2014). The frequency and nature of resolution of potential police provoked shooting encounters. *International Journal of Law and Psychiatry, 37*, 383-389.

Morabito, M.S., Kerr, A.N., Watson, A., Draine, J., Ottati, V., & Angell, B. (2012). Crisis intervention teams and people with mental illness: Exploring the factors that influence the use of force. *Crime & Delinquency, 58*(1), 57-77.

Novella, E.J. (2008). Theoretical accounts on deinstitutionalization and the reform of mental health services: a critical review. *Medical Health Care Philosophy, 11*(3), 303

O'Brien, A.J., & Thom, K. (2014). Police use of TASER devices in mental health emergencies: A review. *International Journal of Law and Psychiatry, 37*, 420-426.

Olivia, J.R., & Morgan, R. (2010). A practical overview of de-escalation skills in law enforcement: Helping individuals in crisis while reducing police liability and injury. *Journal of Police Crisis Negotiations, 10*, 15-29.

Pakes, F., Shalev-Greene, K., & Marsh, C. (2014). Crisis, trauma and loss: An exploratory study into those who 'come to notice' to police and health services and subsequently abscond. *International Journal of Police Science & Management, 16*(4), 297-307.

Parent, R. (2011). The police use of deadly force in British Columbia: Mental illness and crisis intervention. *Journal of Police Crisis Negotiators, 11*(1), 57-71.

Parker, A., Scantlebury, A., Booth, A., MacBryde, J.C., Scott, W.J., Wright, K., & McDaid, C. (2018). Interagency collaboration models for people with mental ill health in contact with the police: a systematic scoping review. *BMJ Open, 8*, 1-14.

Patch, P.C., & Arrigo, B.A. (1999). Police officer attitudes and use of discretion in situations involving the mentally ill: The need to narrow the focus. *International Journal of Law and Psychiatry, 22*(1), 23-35.

Polit, D.F., & Beck, C. (2012). Nursing research: Generating and assessing evidence for nursing practice (9th ed.). Philadelphia, PA: Wolters Kluwer | Lippincott Williams & Wilkins.

Redondo, R.M., & Currier, G.W. (2003). Characteristics of patients referred by police to a psychiatric emergency service. *Psychiatric Services, 54*(6), 804-806.

Ritter, C., Teller, J.L.S., Marcussen, K., Munetz, M.R., & Teasdale, B. (2011). Crisis intervention team officer dispatch, assessment, and disposition: Interactions with individuals with severe mental illness. *International Journal of Law and Psychiatry. 34*, 30-38.

Rosenbaum, N., Tinney, M., & Tohen, M. (2017). Collaboration to reduce tragedy and improve outcomes: Law enforcement, psychiatry, and people living with mental illness. *American Journal of Psychiatry, 174*(6), 513-517.

Schulenberg, J.L. (2016). Police decision-making in the gray zone: The dynamics of police-citizen encounters with mentally ill persons. *Criminal Justice and Behavior, 43*(4), 459-482.

Shapiro, G.K., Cusi, A., Kirst, M., O'Campo, P., Nakhost, A., & Stergiopoulos. (2015). Co-responding police-mental health programs: A review. *Administration and Policy in Mental Health and Mental Health Services Research, 42*(5), 606-620.

Sheridan, E.P., & Teplin, L.A. (1981). Police-referred psychiatric emergencies: Advantages of community treatment. *Journal of Community Psychology, 9*, 140-147.

Teller, J.L.S., Munetz, M.R., Gil, K.M., & Ritter, C. (2006). Crisis intervention team training for police officers responding to mental disturbance calls. *Psychiatric Services, 57*(2), 232-237.

Tyuse, S. (2012). A crisis intervention team program: Four year outcomes. *Social Work in Mental Health, (10)*6, 464-477.

Watson, A.C., Corrigan, P.W., & Ottati, V. (2004). Police officers' attitudes toward and decisions about persons with mental illness. *Psychiatric Services, 55*(1), 49-53.

Wood, J., & Watson, A. (2017). Improving police interventions during mental health-related encounters: Past, present, and future. *Policing and Society, 27*(3), 289-299.

Appendix A

Glossary of Terms

Disposition Checks: For the purposes of this study, disposition checks are completed by AHS Protective Services members. A disposition check will indicate if PMI are admitted to hospital or discharged home from the ED following MHAA.

Informal Encounters: Non-criminal encounters between PMI and police not originating from a call for service.

Knoxville Model: A joint-partnership between a community mental health agency and a police service involving a mental health professional with a designated police member. The mental health professional is employed by the community agency whereas the police member is employed by the police service. The partnership will respond to calls for service involving mental health concerns.

Mental Health Act Apprehension: An apprehension done by a Peace Officer. See Appendix A (Form 10).

Separate Response Model: An informal partnership between a community mental health agency and a police service. Both may attend calls for service at the same time, but each partner will arrive independently from the other. The Separate Response Model operates on an as-needed basis.

Substance Related Form 10s: A Mental Health Act Apprehension that is completed primarily due to illicit drug or alcohol intoxication.

Appendix B

Alberta Government

Statement of Peace Officer on Apprehension (Form 10)

Mental Health Act Section 12

_____ was apprehended on _____ at _____.
(name of person apprehended if known) (date) (time)

He/She was apprehended at (describe place and address)

I have reasonable and probable grounds to believe that
(a) the person apprehended is suffering from mental disorder,
(b) the person apprehended is

Note: All four criteria must be met.

☐ likely to cause harm to the person or others or to suffer substantial mental or physical deterioration or serious physical impairment,

or

☐ subject to a community treatment order and is not complying with the order,

(c) the person apprehended should be examined in the interests of his/her own safety or the safety of others, and
(d) the circumstances are such that to proceed under section 10 of the *Mental Health Act* would be dangerous.

The grounds for my belief are:

Dated this _____ day of _____, 20____.

_____ _____
(badge number of peace officer) (detachment)

_____ _____
(printed name of peace officer) (signature of peace officer)

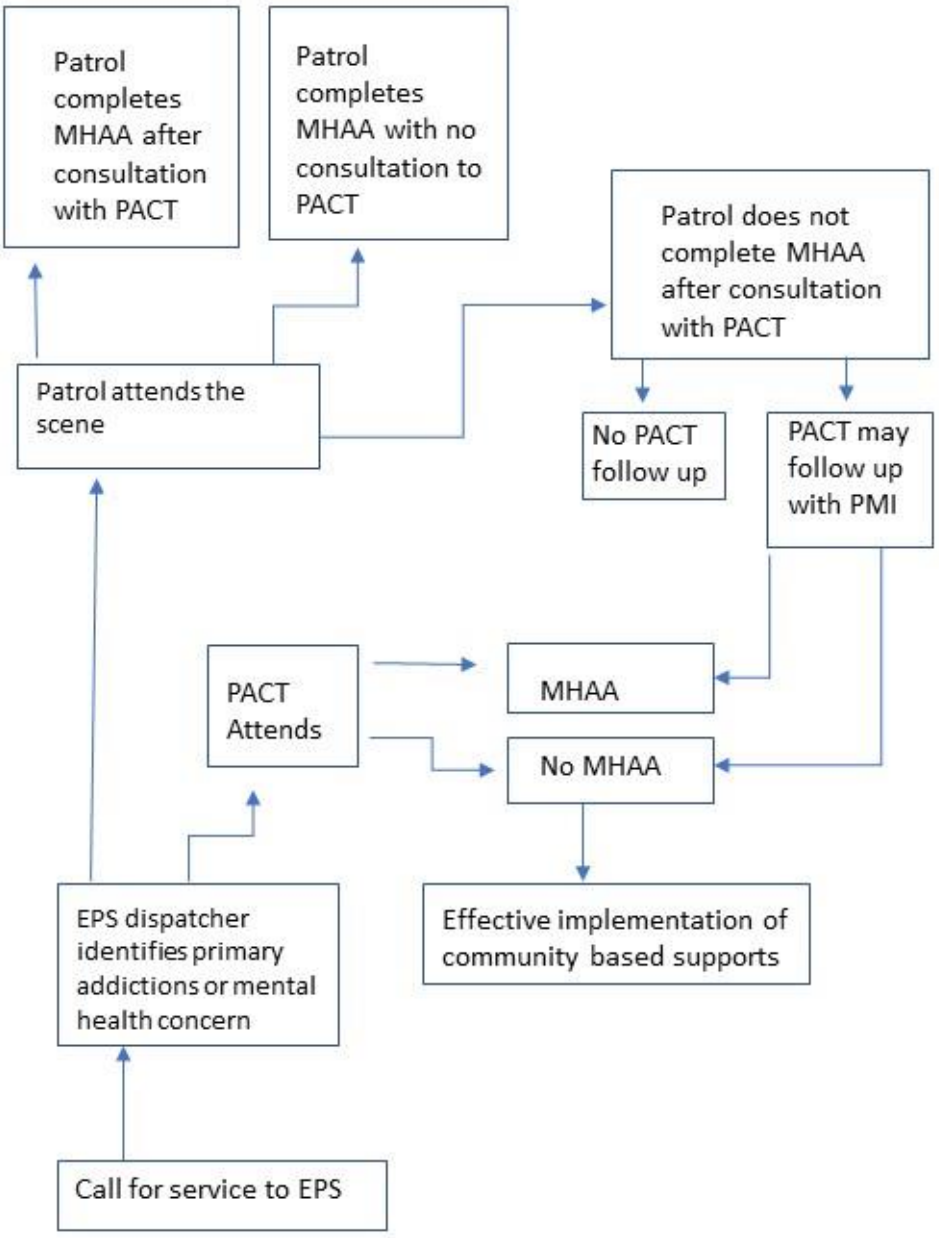
Note: Sections 1(g) of the Act read:

1(g) "mental disorder" means a substantial disorder of thought, mood, perception, orientation or memory that grossly impairs
(i) judgment,
(ii) behaviour,
(iii) capacity to recognize reality, or
(iv) ability to meet the ordinary demands of life.

MH1986 (2013/11) 1 & 2 - Facility 3 - Peace Officer Page 1 of 1

Appendix C

Figure 1.1



Appendix D

Section A

Monthly data gathered (January 2016 – December 2016)

1. Total (n) of Form 10 apprehensions
2. Presentations (n) per one of four hospital sites
3. US/PACT consult (n) of Form 10 apprehensions
4. US/PACT consults (n) admitted following Form 10 apprehension
5. US/PACT consults (n) not admitted following Form 10 apprehension
6. US/PACT consults (n) unknown outcome
7. No US/PACT consults/EPS involvement only (n) Form 10 apprehensions
8. No US/PACT consults/EPS involvement only (n) admitted following Form 10 apprehension
9. No US/PACT consults/EPS involvement only (n) discharged from ED following Form 10 apprehension

Section B

Monthly data gathered (April 2016 – December 2016)

1. (n) calls to EPS
2. (n) calls to EPS admitted following Form 10 apprehension
3. (n) calls to EPS diverted from ED/no Form 10 apprehension
4. (n) calls to US only
5. (n) calls to US admitted following Form 10 apprehension
6. (n) calls to US diverted from ED/no Form 10 apprehension

Appendix D

Section C

Monthly data gathered (August 2016 – December 2016)

Same data collection as Section A including the addition of:

1. Substance related (n) Form 10 apprehensions
2. Non-Substance related (n) Form 10 apprehensions
3. Admission to hospital of substance related (n) Form 10 apprehensions
4. Discharge from ED of substance related (n) Form 10 apprehensions
5. Admission to hospital of non-substance related (n) Form 10 apprehensions
6. Discharge from ED of non-substance related (n) Form 10 apprehensions

Appendix E

UNIVERSITY OF ALBERTA

Peter Vermeulen <pvermeul@ualberta.ca>

HERO: Your Ethics Application is Approved Pro00089675

1 message

hero@ualberta.ca <hero@ualberta.ca> Tue, Apr 9, 2019 at 3:50 PM
Reply-To: DoNotReply@ais.ualberta.ca
To: pvermeul@ualberta.ca

UNIVERSITY OF ALBERTA

Ethics Application has been Approved

ID:	Pro00089675
Title:	Mental Health Diversion from Hospital Emergency Departments: Examining a Joint Effort of two Mental Health and Police Partnerships
Study Investigator:	Peter Vermeulen
Description:	This is to inform you that the above study has been approved. Click on the link(s) above to navigate to the HERO workspace. Please do not reply to this message. This is a system-generated email that cannot receive replies.

University of Alberta
Edmonton Alberta
Canada T6G 2E1

Contact Us | Privacy Policy | City of Edmonton

Appendix E

BRANDON UNIVERSITY

Brandon University Research Ethics Committee (BUREC)
Ethics Certificate for Research Involving Human Participants

The following ethics proposal has been approved by the BUREC. **Ethics Certification is valid for up to five (5) years from the date approved, pending receipt of Annual Progress Reports.** As per *BUREC Policies and Procedures*, section 6.0, "At a minimum, continuing ethics research review shall consist of an Annual Report for multi-year projects and a Final Report at the end of all projects... Failure to fulfill the continuing research ethics review requirements is considered an act of non-compliance and may result in the suspension of active ethics certification; refusal to review and approval any new research ethics submissions, and/or others as outlined in Section 10.0".

Any changes made to the protocol must be reported to the BUREC prior to implementation. See *BUREC Policies and Procedures* for more details.

As per *BUREC Policies and Procedures*, section 10.0, "Brandon University requires that all faculty members, staff, and students adhere to the *BUREC Policies and Procedures*. The University considers non-compliance and the inappropriate treatment of human participants to be a serious offence, subject to penalties, including, but not limited to, formal written documentation including permanently in one's personnel file, suspension of ethics certification, withdrawal of privileges to conduct research involving humans, and/or disciplinary action."

Principal Investigator:	**Mr. Peter Vermeulen, Brandon University**
Title of Project:	**Mental Health Diversion from Hospital Emergency Departments: Examining a Joint Effort of two Mental Health and Police Partnerships**
Co-Investigators:	n/a
Faculty Supervisor: *(if applicable)*	Dr. Penny Tryphonopoulos, Brandon University
Research Ethics File #:	22427
Date of Approval:	January 29, 2019
Ethics Expiry Date:	January 29, 2024
Authorizing Signature:	

Christopher D. Hurst

Mr. Christopher Hurst
Chair, Brandon University Research Ethics Committee (BUREC)

270 18th Street, Brandon MB, Canada R7A 6A9 204.727.9712 BrandonU.ca

Appendix E

Healthy Albertans.
Healthy Communities.
Together.

November 26, 2018

Research Ethics Board
Brandon University
270 – 18 ST
Brandon, MB
R7A 6A9

Re: Permission to use secondary data

Dear Members of the Research Ethics Board:

Please consider this letter as a formal notice to indicate Peter Vermeulen has been allowed access to secondary data from the Urgent and Intensive Services portfolio. This access is for the purposes of his thesis research. It should be noted there is no patient or client information in the secondary data.

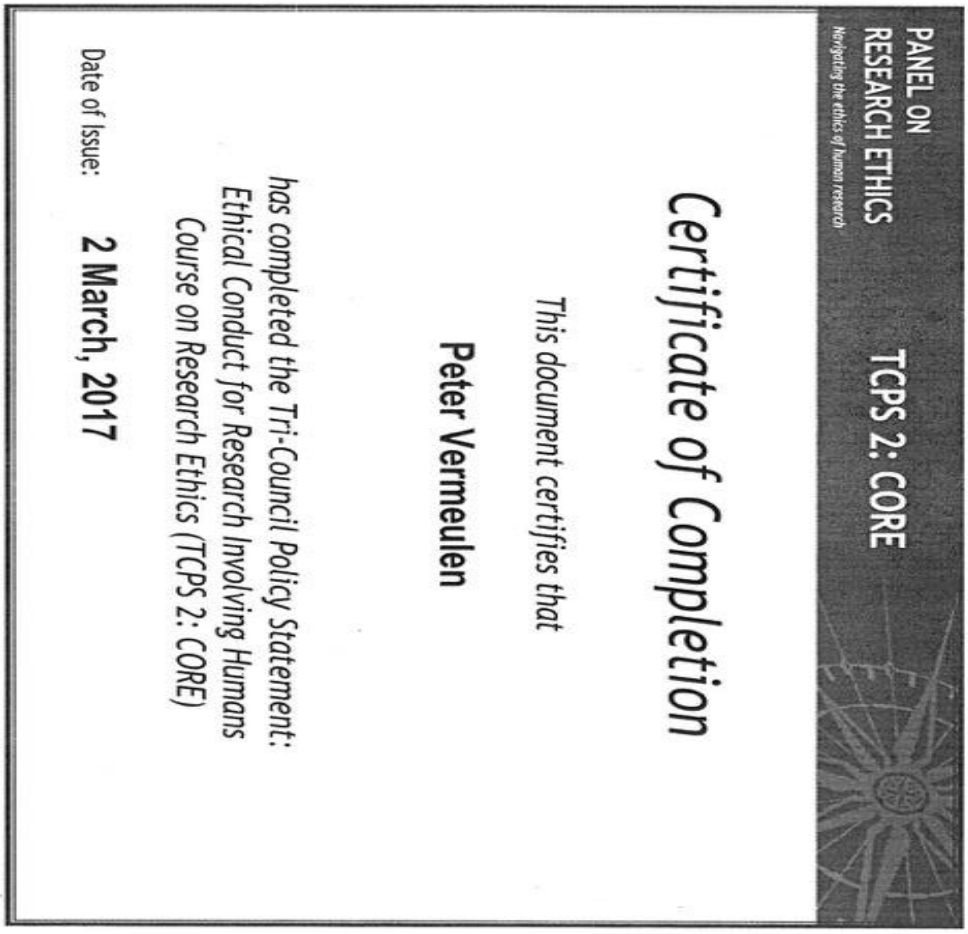
Sincerely,

Pamela Coulson
Director – Urgent and Intensive Services, Edmonton Zone
Alberta Health Services
Edmonton Mental Health Clinic
Edmonton, Alberta
pamela.coulson@albertahealthservices.ca

Alberta Health Services

Urgent and Intensive Services
9942 108 Street, Edmonton, AB, T5K 2J5
p: 780-342-7625
Pamel.Coulson@ahs.ca

Appendix E



PANEL ON RESEARCH ETHICS
Navigating the ethics of human research

TCPS 2: CORE

Certificate of Completion

This document certifies that

Peter Vermeulen

has completed the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans Course on Research Ethics (TCPS 2: CORE)

Date of Issue: **2 March, 2017**