Responding to Illegal Drug Use in Acute Care: Patient Needs and Perspectives

by

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Abstract

People who use illegal drugs (PWUD) seek acute care at disproportionately higher rates than members of the general population. Presentations to acute care provide an important opportunity to engage with PWUD. However, hospitals are often ill-equipped to meet the needs of this population. PWUD experience high rates of delayed presentations for care, premature discharge, and frequent readmissions as medical and social crises are not adequately addressed during hospitalizations. These indicators of unmet need warrant research and policies that seek to improve acute care for this patient group. The overall goal of my thesis is to identify ways to improve and refine acute care delivery for PWUD, ultimately to promote better patient and hospital outcomes.

My thesis includes two studies that addressed this goal. In Study 1 I assessed prevalence of perceived unmet service needs amongst acute care-seeking PWUD, self-reported barriers to care, and the utility of the Behavioral Model for Vulnerable Populations in predicting high levels of unmet service needs for this population. In Study 2 I described the perspectives of hospitalized PWUD regarding reasons for accessing or not accessing a supervised consumption service (SCS) in a large, urban hospital in Western Canada. A patient-oriented approach underpinned both studies, in which patients who use drugs provided first-hand knowledge regarding their service needs. People with lived experience of substance use were also consulted on each study design as well as my interpretations of the data.

To conduct Study 1, I analyzed self-report survey data from 285 recently hospitalized PWUD. Using hierarchical setwise logistic regression, I applied the Behavioral Model for Vulnerable Populations by entering predictor variables in blocks. Each block represented a domain of the framework (predisposing, enabling, and need factors). In Study 2 I adopted a

focused ethnographic study design and conducted 28 semi-structured interviews with SCS eligible patients to elicit their perspectives on SCS uptake. On average, interviews were one hour long, and I used latent content analysis to examine participant accounts.

Findings from Study 1 demonstrate that despite most participants reporting a need for services and receiving services, many had high levels of perceived unmet service needs (46%), with unmet needs for counselling (56%) and social interventions (50%) being most prevalent. Structural barriers to services were more commonly reported than motivational barriers. These findings are similar to those reported in community and population health studies, which may reflect broader healthcare utilization patterns amongst this population. Tailoring acute care delivery to better suit the needs of PWUD may therefore help address the overall service needs of this population more effectively. In my regression analyses, including all three Vulnerable Model domains best explained unmet service needs. Significant predictors of high unmet need included reporting recent criminal activity, adverse childhood experiences, transitory sleeping, lack of a regular community support worker, and depression.

Study 2 findings show that participants primarily accessed the SCS to minimize risk of drug-related harms in hospital and to avoid taking drugs in unsafe areas of the facility where they may face sanctions from hospital staff or drug law enforcement. However, fears of formal or informal sanctions and worries about changes to patient care following SCS use (e.g., judgement by staff, changes to medication) deterred uptake for some. Participants also cited limitations to the service's offerings, namely SCS eligibility requirements and a lack of inhalation services available. Together, these findings suggest that PWUD may be inclined to access SCS in acute care facilities to help address safety needs while using drugs in hospital. However, barriers to

access must be addressed to facilitate patient uptake and wider provision of SCS in acute care, which may prove to be difficult without broader federal or provincial drug policy reforms.

Preface

This thesis is original work by Brynn Kosteniuk. Chapters 1 and 2 were developed and written in collaboration with Dr. Elaine Hyshka, Dr. Ginetta Salvalaggio, and Dr. T. Cameron Wild. Chapter 2 was a secondary analysis of a study originally designed by G. Salvalaggio and T.C. Wild. Chapter 3 was developed and written in collaboration with E. Hyshka, Hannah L. Brooks, and G. Salvalaggio. Chapter 3 is part of a larger project, primarily conceived and designed by E. Hyshka and G. Salvalaggio. Chapter 4 was written primarily in collaboration with E. Hyshka.

The original research project from which Chapter 2 was developed received research ethics approval from the University of Alberta Health Research Ethics Board and the University of Calgary Conjoint Health Research Ethics Board, "ARCH Team: Patient Outcomes Evaluation," No. Pro00048888 (July 14, 2014) and REB15-1464 (June 2, 2015), respectively. The original project also received operational approvals from Alberta Health Services. The research protocol for Chapter 3 received research ethics approval from the University of Alberta Research Ethics Board, "Royal Alexandra Hospital Supervised Consumption Services Post-Implementation Study: Patient and Provider Experiences," No. Pro00082537 (April 24, 2019), as well as operational approvals from Alberta Health Services. A community advisory group (comprised of people with lived experience of illegal drug use) was also consulted on an iterative basis for both studies. Members of the advisory group (Indigenous and non-Indigenous) approved each study protocol and confirmed interpretations of the data.

No part of this study has been previously published. Segments of Chapter 3 were presented at scientific conferences and knowledge translation events, including:

- The Canadian Conference on HIV/AIDS Research (CAHR). Quebec City, QC. (2020, May).
- The Inner City Health and Wellness Program Annual Symposium at the Royal Alexandra Hospital. Edmonton, AB. (2020, January).
- Grand rounds presentation for staff at the Royal Alexandra Hospital. Edmonton, AB. (2019, December).
- University of Alberta This is Public Health Week. Edmonton, AB. (2019, November).
- The Canadian Society of Addiction Medicine (CSAM) Annual Meeting and Scientific Conference. Halifax, NS. (2019, October).

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Glossary of Abbreviations and Terms

AMCT	Addiction medicine consult team
ACEs	Adverse childhood experiences
ED	Emergency department
IDU	Injection drug use
PNCQ	Perceived Need for Care Questionnaire
PWUD	People who use illegal drugs (e.g., controlled substances, non-medical use of prescription drugs)
RAH	Royal Alexandra Hospital
SCS	Supervised consumption service (also referred to by some participants in Chapter 3 as “the injection site,” “the site,” and “the safe consumption site”)
SUD	Substance use disorder
Supplies	Harm reduction equipment used to consume drugs (e.g., needles and syringes, cookers, filters, sterile water, alcohol swabs, tourniquets, and sharps disposal containers)

Chapter 1: Introduction

1.1 Overview of Thesis

Historically, people who use illegal drugs (PWUD) have described disproportionately negative experiences with healthcare systems compared to other patients. Mainstream healthcare models struggle to effectively address the medical, substance use, and mental health care needs of PWUD while mitigating the impacts of criminalization, racialization, colonization, discrimination, and economic marginalization (1–3). Despite a higher burden of illness, PWUD frequently report unmet service needs for their substance use and mental health concerns (4–10), and describe many barriers to accessing primary care (11–13). This may in part explain why PWUD seek help at acute care hospitals at far higher rates than members of the general population (13–15). Presentations to hospital provide valuable opportunities for helping address the most salient needs of this population (16,17). However, PWUD also encounter obstacles to accessing substance use and mental health services in hospital settings (1,18,19), and have cited hospitalizations as temporary, ineffective solutions for their needs (19). Hospitals have further been described as high risk environments for PWUD, as they are criminalized spaces that enforce formal or informal bans on illegal substance use (20,21).

Overall, there is a need for research and policies that seek to improve acute care for PWUD (20,22–24). Generating new knowledge on tailoring service delivery to meet the needs of PWUD could especially inform hospital service planning. Therefore, the overarching goal of this thesis is to identify ways to advance and refine acute care delivery, ultimately to better serve the needs of PWUD, improve hospital retention, and promote positive health outcomes for PWUD. This thesis contains two distinct studies that each contribute to this body of literature, with the respective aims of 1) assessing the self-reported unmet service needs of acute care-seeking

PWUD to help tailor hospital service delivery and better address extant service needs, and 2) examining patient perspectives on a novel acute care supervised consumption service to guide service quality improvements and ultimately facilitate further evaluation and expansion of this intervention.

This thesis begins with an in-depth literature review in relation to both studies, including a) substance use epidemiology in Canada, b) common health-related harms associated with substance use and how they are exacerbated by the criminalization of drugs, and c) the unique hospital experiences of PWUD. A review of literature specific to each study is then provided, including d) the unmet substance use and mental health service needs of PWUD, and e) supervised consumption services in acute and non-acute care settings. Chapter 1 concludes with the rationale and research aims addressed by this thesis. Chapters 2 and 3 outline each study in a paper-based format. Chapter 4 synthesizes the significance of this research, and reviews its potential contributions to the literature, as well as its clinical and public health relevance.

1.2 Literature Review

1.2.1 Epidemiology of Substance Use in Canada

In the most recent 2017 Canadian Tobacco, Alcohol and Drugs Survey, approximately 987,000 Canadians reported using at least one illegal drug (cocaine, ecstasy, methamphetamines, hallucinogens, and/or heroin), an increase from 678,000 in 2015 (25). Illegal drug use in Canada is more common amongst males than females (19% and 11% past-year prevalence, respectively), and amongst young adults ages 20 to 24 (25). Other studies involving cohorts of PWUD suggest that the average age may be older, around 40 years (26–28). Substance use disorders (SUDs; according to Composite International Diagnostic Interview criteria) are also prevalent in Canada; lifetime prevalence of SUDs (involving illegal and/or legal drugs, including alcohol and

cannabis) has been estimated by Statistics Canada at 22% (29). Approximately 4% of Canadians will experience a SUD related to substances other than alcohol, tobacco, or cannabis in their lifetime (29).

Indigenous (First Nations, Inuit, Métis) peoples in Canada experience a disproportionate population burden of substance use (30). According to the 2016 Canadian Census, Indigenous peoples represented 6.5% of the population in Alberta, yet they comprised 18% of Albertans who died from an opioid-related overdose in 2017 (31). Colonizing policies implemented by the Canadian government (e.g., residential schools, apprehension of Indigenous children) have, and continue to marginalize and discriminate against Indigenous peoples (32,33). Such policies have led to high rates of poverty, family violence, blood borne infections, and over-representation in the Canadian criminal justice system (32–34). For similar reasons, Indigenous peoples also experience disproportionate rates of SUDs, as substance use can be a coping strategy and a form of self-medication to help address pain and loss (32). Given that poverty, homelessness, childhood abuse, and cultural dislocation are risk factors for injection drug use (IDU) and blood borne infections, Indigenous peoples also experience disproportionately high rates of these drug-associated harms (33).

General fiscal costs associated with substance use (e.g., healthcare, loss of productivity, criminal justice system) in Canada also remain a public concern. In 2017 the general costs of substance use totalled $46 billion, or $1,258 per Canadian (35). Substances other than alcohol, tobacco, and cannabis (e.g., opioids, stimulants, and other substances) accounted for approximately one third of these expenditures (30%; $14 billion). Although the overall costs of substance use have remained fairly steady in accordance with Canada's population growth, associated healthcare costs (e.g., inpatient hospitalizations, emergency department presentations,

day surgeries, specialist SUD treatment, physician pay, and prescription drug costs) have been increasing disproportionately. Per-capita healthcare costs grew by 14.8% between 2007 and 2014 (36), and by an additional 3% between 2015 and 2017 (35).

Following alcohol and tobacco, opioids were the third most costly substance in Canada between 2015 and 2017, which has primarily been explained by opioid-related overdoses and deaths (35). Between January 2016 and December 2019 there were 15,393 apparent opioid-related deaths in Canada (37). Following an era of overprescribing in the 1990s and 2000s, Canada witnessed a reduction in the supply of prescription opioids available as prescribing guidelines were implemented and certain medical-grade drugs de-listed from provincial formularies (38,39). This curtailment has contributed to increased use of clandestinely-produced illegal opioids (e.g., heroin and fentanyl), as well as more frequent diversion of prescription opioids (40,41). Clandestinely-produced opioids are now the primary contributing factor to opioid-related fatal and non-fatal overdoses (38,42,43). In 2019, 77% of accidental opioid-related deaths in Canada involved fentanyl or its analogues (e.g., carfentanil) (37). Equally concerning, 72% of accidental apparent opioid-related deaths in 2019 involved one or more non-opioid substance (e.g., alcohol, benzodiazepines, cocaine, methamphetamines, etc.) (37). Methamphetamine use in particular has been increasing and is frequently used in conjunction with opioids or is contaminated with fentanyl (44). In the first quarter of 2020, methamphetamine was the most frequently detected substance among fentanyl-related deaths that involved at least one other drug (50% of cases) in the province of Alberta (45).

1.2.2 The Criminalization of Drugs and Health-Related Harms

Illegal drug use is associated with an array of adverse health outcomes, including heart attack and stroke, kidney damage, liver failure, and mental health issues (46). IDU can be

particularly harmful, as it can increase risk of blood borne infection transmission, as well as overdose and premature mortality (47,48). People who inject drugs constitute the largest proportion of hepatitis C virus (HCV) cases in Canada (49), and HIV incidence rates are 59 times higher than the general population (50). Serious health conditions, such as cutaneous injection-related infections, endocarditis, sepsis, and osteomyelitis, can also result from IDU, which can require long-term (e.g., two or more weeks) treatment with antibiotics (51–53). However, these health outcomes are greatly exacerbated by the criminalization of drugs.

Rooted in neoliberalist race and class ideology, drug prohibition in Canada was founded in response to non-British immigration in the late 19th and early 20th centuries (54). For example, the criminalization of certain opioids (e.g., in the 1908 *Opium Act*) was in response to the perception of Chinese immigration as a threat to white, upper-class lifestyle, thereby limiting alternative financial avenues and oppressing the Chinese working-class position (54). Similar historical dynamics are also seen in the criminalization of cocaine and cannabis, which are associated with immigration from areas around the Caribbean (54). Such associations with drug use have persisted across time, as people who use illegal drugs (PWUD)[1] are still frequently perceived by members of the general population as non-conforming and criminal (22,55–57).

Indeed, PWUD are overrepresented in the corrections system globally (58). In Canadian penitentiaries, approximately two-thirds of people incarcerated report non-injection drug use prior to incarceration, and as many as one third report prior IDU (59). Substance use and its criminalization are also known to intersect with a number of other determinants, namely unstable

[1]The term *people who use illegal drugs* (PWUD) is used throughout to denote people who consume a variety of illegal substances (e.g., illegal stimulants, illegal opioids, non-medical use of prescription drugs) through a number of administration routes (e.g., intravenous, inhalation, insufflation).

and poor-quality housing, precarious work and unemployment, and adverse childhood experiences (60). Men are also more likely than women to report illegal drug use (25), although women who use drugs and other gender diverse groups are at higher risk of experiencing harms associated with substance use, such as gender-based violence, blood borne infections, and incarceration (61).

The extent to which PWUD can use drugs safely and decrease risks of negative health outcomes is also restricted by drug prohibition. Specifically, safety measures to minimize risks - such as access to sterile syringes/pipes, using with others to help prevent overdose death, and consuming drugs in clean, safe environments (52,62) - are often limited by stigma (e.g., being judged or discriminated against for illegal drug use) and surveillance (e.g., local policing practices). For example, fears of stigma and conflict with authorities are both known to deter needle exchange program uptake, which can lead to syringe reuse, sharing, and unsafe disposal of harm reduction supplies (1,63,64). Criminalization has also been shown to prevent calls to 911 during overdose events, as PWUD often fear contact with medical professionals and police (65–68).

Local policing can also limit harm reduction practices amongst PWUD in public spaces (e.g., street/park, public washrooms), such as by directly and indirectly discouraging carrying sterile supplies and by driving quick and discreet substance use, which increases chance of overdose, reuse of equipment, infection transmission, and other drug-related complications (62,64,69–71). Surveillance can also create barriers to accessing overdose prevention services (68). For example, fear of contact with authorities (especially for PWUD with warrants) and increased police presence following income assistance pay days can impel substance use back into public spaces, where PWUD may have to respond to overdose without medical assistance

(68). One study has reported that many Canadian police officers oppose supervised consumption and overdose prevention services due to ideological views that conflict with harm reduction philosophies (72).

1.2.3 People Who Use Illegal Drugs and Acute Care

Given the unique health implications associated with illegal drug use and the criminalization of drugs, PWUD utilize emergency departments (ED) and acute care beds far more frequently compared to members of the general population. One meta-analysis of data from North American and Australian PWUD reported ED visits and hospitalization rates 4.8 and 7.1 times greater than that of the general population, respectively (73). Likewise, a study that focused specifically on Canadian PWUD reported 7.0 and 7.7 times the rates of ED visits and hospitalizations (74). In the context of the opioid emergency in Canada, opioid-related hospitalizations increased by 27% between 2013 and 2018 (75). High rates of acute care utilization are also often compounded by poor connections to primary care services, in which some social and medical problems could be addressed before becoming acute (13–15). Despite high rates of acute service utilization, PWUD return frequently for hospital care as crises are not adequately addressed, often because acute facilities fail to provide comprehensive, patient-centered care for this population (24).

Inadequate patient-centered care in part reflects the translation of drug prohibition into the acute care setting, as abstinence-based policies and bans on illegal drug use are commonly enforced in hospitals (20,21). However, extant literature demonstrates that approximately 44% of patients who inject drugs will inject during their hospital admission (21), and such abstinence-based strategies can further exacerbate drug-related harms to PWUD (20,21,76–79). Much like the association between drug criminalization and public substance use, hospital bans lead PWUD

to conceal drug use through unsafe practices (20,21,24,80). For example, PWUD frequently report reusing unsterile consumption supplies and consuming drugs alone in unsanitary, locked, and/or hidden locations around the hospital, such as washrooms or stairwells, increasing their risk of fatal overdose, transmission of blood borne infections, and injection-related complications (20,81,82).

Indeed, PWUD have reported that security and surveillance in and around hospital grounds contribute to these unsafe practices, as getting caught using illegal drugs in hospital can lead to involuntary discharge by care providers or bans by security personnel (20,21,80,83). PWUD have described feeling intense surveillance and monitoring during their stays (e.g., undergoing frequent searches by staff and security, substances confiscated upon admittance), making hospitals feel like "jails" or "prisons" rather than places of healing (20 p7). Such negative experiences only worsen perspectives of acute care institutions amongst patients who use drugs and diminish their likelihood of seeking help in the future (83). Further, periods of abstinence during hospital admissions can lower tolerance to drugs and thereby increase risk of overdose once discharged back into the community (84,85). These concerns have led experts to question whether abstinence-based regulations are ethically sound, as such policies may enforce inappropriate care by neglecting the nature of SUDs - which are characterized by persistent drug use even in the face of worsening consequences (86).

Compounding these experiences, mutual mistrust between hospital staff and PWUD is commonly reported in the literature. Health professionals often hold stigmatizing attitudes towards PWUD, such as that they are potentially drug-seeking, manipulative, and/or violent (22,87–90). Providers have cited that they often worry that pain complaints are a form of manipulation to obtain prescription drugs, and that providing pain medications may be enabling

(20,91,92). In turn, staff have described feeling apprehensive about prescribing and administering medications, leading some to withhold medications from this patient population altogether (20,88,90,91,93,94). This is especially problematic for patients who use opioids, given that they often have a higher opioid tolerance and require a much higher therapeutic dosage than the average patient (77). PWUD likewise describe that hospital staff have little empathy for their lives and health because they use drugs, and that they receive poor quality of care as a consequence (20,22,23,89,93,95). In the literature this has included inadequate care for health issues related to substance use especially, such as overdose care, treatment for injection-related infections, and dismissal of withdrawal and pain symptoms (20,22,24,88).

Inadequate pain and withdrawal management can make self-medication with illegal drugs necessary for some patients (20,23,24,77,78,96). Patients with well-managed pain or withdrawal may still consume additional substances for a number of reasons, such as to maintain comfort, because of loneliness or sadness, or to prevent re-emerging pain and/or withdrawal symptoms (24,91). However, when patients do use their own substances in acute care, they frequently report getting caught and discharged or kicked out (20,21,80). Premature discharge is concerning, as it worsens health complications and perpetuates unplanned readmissions, repeated ED visits, and exacerbates premature mortality (97–100). Inadequate pain and withdrawal management can also foster feelings of frustration amongst patients who receive such suboptimal care, which can lead to tension and occasionally conflict between patients and providers (20,93,94,101).

Overall, the effects of prohibitions on substance use in the hospital environment for PWUD has been demonstrated to contribute to high rates of premature discharge (e.g., patient led and staff led), delayed help-seeking, and costly readmissions (1,22,93,102,103). When

patient-provider rapport is strong, however, patient care for PWUD has been shown to improve, leading to increased patient satisfaction and adherence to proposed treatment, as well as earlier presentation for care (102). This demonstrates a need for services in the acute care setting that disrupt stigma amongst providers in particular (22,23), and that promote hospital retention for PWUD (20).

1.2.4 Unmet Service Needs of Acute Care-Seeking People Who Use Illegal Drugs

The substance use and mental health service needs of PWUD are of increasing interest to policy makers, ultimately to help inform improvements to health system delivery and planning. Health service evaluations aim to quantify service gaps, which can be defined as the "difference between the true prevalence of a disorder and the treated proportion of individuals affected by the disorder" (104 p859). In the substance use field, service gaps are generally calculated as the proportion of those with a SUD who do not access a general or specialized service relative to the total number of people with a SUD in the population (105). However, disorder prevalence alone is oftentimes insufficient for estimating service gaps amongst PWUD.

There are many diagnostic criteria for determining the prevalence and severity of SUDs, and as a result, gap estimates vary considerably (105,106). For example, in one study that investigated SUD treatment amongst youth, estimates of unmet need for treatment were found to differ on the basis of DSM-IV criteria for substance dependence versus substance abuse; 21.3% of participants who met criteria for dependence (e.g., involving hallucinogens, inhalants, tranquilizers, cocaine, heroin, and nonmedical use of opioids, stimulants, and/or sedatives), received substance use treatment, while 11.4% of participants who met criteria for substance abuse received treatment (106). The DSM-5 no longer differentiates between dependence and abuse but rather classifies SUDs on a severity continuum (mild, moderate, or severe) (107). In

more recent research using DSM-5 criteria, 2.9% of adult participants with a mild SUD received treatment, while 28.4% of those with a severe SUD received treatment (108). While it is certainly logical that treatment uptake corresponds with DSM-determined SUD severity, these findings highlight that when using diagnostic-based criteria, there is no single gap estimate that can be used across populations of PWUD.

Many studies also calculate the treatment gap on the basis of service receipt, even though diagnosis of a SUD does not necessarily imply a need for services (109–111). Studies using self-report measures demonstrate that need for mental health or substance use-related services amongst individuals with a SUD can be as low as 13% and as high as 82% (4,112–117). Further, those who receive care may still report unmet needs, and individuals who are subthreshold for SUD criteria may still seek out and benefit from services (109–111,118–120). People who access mental health or substance use services (e.g., counselling, mental health treatment, or help for use of alcohol or drugs), still self-report high rates of unmet needs for their mental health and/or substance use, despite accessing care regularly (121,122).

In response to these challenges, researchers have begun to assess health service consumer perspectives on substance use and mental health service needs, in particular, perceived unmet service needs[2] (105,109,122,124). In this context, service gaps can be quantified using self-report data as the number of people who perceive that they require care, relative to the proportion who did not receive as much care as they think they required, if any. Understanding self-reported needs for substance use and mental health care is a promising approach because consumers hold

[2] Defined as "How people view their own general health and functional state, as well as how they experience symptoms of illness, pain, and worries about their health and whether or not they judge their problems to be of sufficient importance and magnitude to seek professional help" (123 p3). Due to the population of interest in this thesis and the original study from which data will be drawn from, perceived needs are centred around service needs specific to mental health and substance use.

first-hand knowledge regarding their own needs that clinicians and researchers do not (125–127). How individuals perceive their own service needs is an important predictor of whether they will seek care for SUDs or other mental health conditions (115). Consumer-defined approaches to estimating unmet need may be especially appropriate for understanding the service needs of structurally vulnerable populations who experience stigmatization or discrimination in healthcare settings, such as PWUD, as potential bias and power differentials are not generally accounted for in expert-determined estimates of care needs (125).

There is currently a substantial amount of research on the perceived unmet service needs of people who use legal and/or illegal substances across various study settings (4,112–116,128–132). In general population surveys, the perceived unmet service needs of people who use legal or illegal drugs have generally been surveyed together, and unmet service need correlates vary. For example, national health surveys conducted in the United States, Australia, and the Netherlands demonstrate that 13-32% of people with any SUD have one or more perceived unmet need (112,116,117,131,132). In Canada, 30% of people with any SUD reported one or more unmet service need in 2012 (128). The perceived unmet needs of groups that are highly vulnerable to drug-related harms have also been examined in the literature, particularly amongst those living in homelessness (114,129,130,132). Overall, common predictors of perceived unmet service needs in the substance use literature have included younger age (115,116,128,129), drug dependence (as determined by DUDIT scores or DSM criteria) (4,114,115,128,129), injection and poly substance use (5–7), co-occurring mental illness (115,116,128,133,134), and unstable or lack of housing (4,135,136).

The perceived unmet service needs of those who use illegal drugs warrant particular investigation. Globally, PWUD experience disproportionate poor health outcomes and excess

mortality (47,137,138), yet are traditionally underserved by conventional healthcare models due to intersecting systemic oppressions of criminalization, racialization, social exclusion, class, and gender for example (1–3). Indeed, PWUD in community settings frequently report perceived unmet service needs for substance use and mental health services (4–10,136), with one survey that recruited street-involved PWUD in Western Canada finding that as many as 82% had at least one unmet service need related to mental health and substance use (4). Unmet needs for social interventions (e.g., employment, housing, educational support) and counselling (e.g., for mental health and/or substance use) are particularly common for this population (4,114). Predictors of unmet needs amongst PWUD in these community and population health studies include depression (8), injection drug use (5–8), poly substance use (10), and living in homelessness (4,8,136).

Although a wealth of research has been conducted on the perceived unmet service needs of PWUD in community-based samples – almost all reporting high rates of unmet service needs – only a small number of studies have explored the self-reported unmet service needs of PWUD in acute care. One study examining general health service utilization patterns amongst PWUD found that unmet mental health needs were the most common reason for ED presentations (139). Similarly, in a descriptive needs assessment of PWUD at ED presentation, unmet needs for sustenance, housing, and mental health and substance use services were common (140). A larger number of studies have interviewed PWUD to understand their acute care experiences and service needs, in which PWUD frequently describe inadequate pain and withdrawal management, as well as needs for harm reduction interventions (e.g., needle and syringe programs, supervised consumption services) (1,20,24,77). Overall, the perceived unmet substance use and mental health service needs of PWUD who are actively seeking help in acute

care hospitals has been poorly described, and to my knowledge, have not yet been systematically assessed using a standardized instrument.

This dearth of literature warrants investigation, considering that PWUD generally experience poor connections to primary care and disproportionately access acute care services (13–15). Presentations to acute care should help address the service needs of PWUD (16,17). However, PWUD also face numerous barriers to accessing substance use and mental health services in hospital settings (1,18,19), and have cited hospitalizations as temporary, ineffective solutions to their care needs (19). Further, PWUD are at high risk of experiencing premature discharge (e.g., patient led and staff led), delayed care-seeking, and frequent readmissions (1,22,93,102,103). Thus, it is critical that we gain understanding of the perceived unmet service needs of acute care-seeking PWUD, as this knowledge could help tailor and improve future hospital service delivery (141).

1.2.5 Supervised Consumption Services in Acute Care

Expanding the provision of supervised consumption services (SCS) to hospital settings may be one strategy for helping improve acute care for PWUD. SCS are safe and clean facilities in which both legal and illegal drugs are consumed under the supervision of trained staff, such as nurses (142–144). In these spaces, sterile supplies for substance use are provided, and staff are trained to deliver emergency interventions in the case of overdose (e.g., naloxone, oxygen) (142–144). Staff at SCS also provide education on harm reduction (e.g., for using drugs, safer sex), basic health services (e.g., wound care), and offer connections to SUD treatment (e.g., counselling, opioid agonist medications), as well as social programming such as housing services (142–144).

In Canada, SCS are federally exempted under Section 56.1 of the *Controlled Drugs and Substances Act*, which permits the use of controlled substances under medical supervision (142). Canada opened its first sanctioned SCS in Vancouver in 2003, known as Insite (145). Since this time, approximately 50 SCS across five provinces (British Columbia, Alberta, Ontario, Saskatchewan, and Quebec), and numerous overdose prevention sites (OPS) have been implemented (142). Compared to SCS, OPS are lower threshold, often temporary sites designed to address an urgent overdose need (142). Both SCS and OPS are now integral components of Canada's approach to reducing harms associated with illegal substance use (142).

Three major reviews have synthesized the main health benefits of SCS provision (143,144,146). Most notably, these reviews have found SCS to be an effective way of minimizing risk of blood borne infection transmission and preventing overdose death (e.g., naloxone administration, response to cardiac arrest) (143,144). Indeed, "millions of drug use episodes have been supervised at SCS with no reported overdose deaths" (146 p1). One recent study has found that there is an association between frequent (e.g., at least once per week) SCS use and reduced risk of all-cause mortality (147), supporting the need for expanding SCS coverage across Canada. Further, SCS decrease substance use in public spaces and the amount of discarded needle debris, and improve public order without increasing drug-related crime (143,144). Multiple studies have found that these services are cost effective (143,148).

Although these benefits of SCS have been reported consistently across the academic literature, a recent review article - which assessed the quality of SCS literature - reported that the majority of this research is dated, considering the overdose epidemic attributed to the introduction of clandestinely produced opioids into the illegal drug market (146). The SCS literature is also limited in four other major areas: 1) the potential effects of SCS on practice

outside of the facility; 2) whether the effects of supervised consumption and other services provided by SCS (such as needle exchange and the provision of naloxone) can be delineated; 3) SCS benefits relative to association versus causation; and 4) SCS effectiveness compared to other harm reduction services (146). As such, the findings of SCS research to date may not be entirely generalizable (146).

Further, the extant literature is unrepresentative of SCS both geographically and operationally (146). The majority of SCS research (~85%) has emerged from Insite in Vancouver and MSIC in Sydney (144), despite SCS currently operating in at least ten countries around the world (Australia, Canada, Denmark, France, Germany, Luxembourg, Netherlands, Norway, Spain, and Switzerland) (149), and the majority of SCS operating in Europe (150). In 2014, 88 of an estimated 90 SCS around the world had been implemented in European countries (151). Likewise, the majority of SCS are located in community settings and are integrated with other services (e.g., needle exchange programs, drop in centres), while fewer exist as standalone sites (e.g., only provide services that are directly related to the supervised consumption) and as mobile sites (e.g., can relocate depending on demand and location of clients) (149). However, both Insite and MSIC are standalone facilities. Insite and MSIC also primarily supervise safer injection (145,152). This indicates that other models of SCS (e.g., integrated, mobile), and sites that supervise other routes of administration (e.g., snorting, ingesting, smoking, peer assisted injection) have either been understudied or extant evaluations have not yet been captured in mass systematic reviews.

In particular, there is currently a paucity of SCS integrated into the acute care hospital setting and lack of associated clinical and academic research. To my knowledge, the Royal Alexandra Hospital in Edmonton (153) is the only SCS globally that specifically serves acute

care hospital patients. This is problematic because hospitalized PWUD frequently report consuming drugs in hidden and unsanitary spaces of the hospital, often alone and with unsterile supplies, thereby increasing risk of overdose, blood borne infection transmission, and injection-related infections (20,81,82). A lack of access to SCS may also heighten risk of premature discharge for patients who use illegal drugs while hospitalized, particularly if they are caught using substances on facility grounds (20,81,82,100). Indeed, in-hospital IDU has been found to be independently associated with premature discharge, frequent readmissions, and excess mortality (100).

It has been suggested that SCS in acute care may help facilitate patient-centered care for PWUD and improve the hospital environment (20,81,82). The provision of hospital-based SCS may especially help improve patient-provider relationships, mitigate pressures to conceal substance use to unsafe areas of the hospital, and minimize risk of drug-related harms to PWUD (e.g., overdose death and transmission of blood borne infections) (80,82,154). However, other research demonstrates that integrating harm reduction services into acute care can be a difficult and lengthy process (155). For example, the operations of a harm reduction oriented addiction medicine consult team (156) and an inpatient needle exchange program (157) at the Royal Alexandra Hospital have been impeded by informal bans on substance use and opposing hospital culture. Understanding factors that facilitate or impede SCS uptake in acute care is especially vital considering the potential for discordance between the highly criminalized hospital environment and the inherent purpose of SCS. It is possible that drug law enforcement (68,83,158) and conflicting staff attitudes could hinder hospital SCS provision (1,80,157).

Support for hospital-based SCS has generally been cited amongst PWUD, as well as local residents, business owners (20,80,159), and academia (77,80–82). However, there have also been

dissenting voices to hospital SCS provision, particularly in the Canadian media. These reports cite concerns surrounding facility space limitations, geographical locations of hospitals (e.g., proximity to PWUD and other substance use services), the "intimidating" nature of hospital facilities to PWUD (para 11 160), and conflicting political ideologies (160–162). However, no formal studies have been conducted on operating hospital-based SCS to assess these concerns.

1.3 Thesis Rationale, Contributions, and Approach

PWUD frequently report unmet needs for substance use and mental health services (4–10,136), experience many barriers to accessing primary care (11–13), and often seek help at general acute care hospitals (13–15). Presentations to hospital provide valuable opportunities for engagement in helping address the medical and social needs of this population (16,17). However, hospitals are often ill-equipped to meet the needs of PWUD (1,18,19), and these patients have described hospitalizations as temporary and ineffective solutions only (19). Further, hospital admissions are often challenging for PWUD. Hospitals have been described as a high risk environment for these patients, as they are surveilled spaces that commonly enforce abstinence-based policies (24,88,103). Public health evidence demonstrates that a significant proportion of hospitalized PWUD continue to use drugs irrespective of these policies (21), and that prohibitions on substance use in the hospital can exacerbate health harms (20,21,24,80,163).

Together, these concerns support a need for research and policies that seek to improve acute care service delivery for PWUD (22,23). Generating new knowledge on tailoring service delivery to meet the needs of PWUD can particularly inform hospital service planning. To address this knowledge gap, the overall goal of this thesis is to identify ways to improve and refine acute care delivery for PWUD, ultimately to better meet the needs of this patient

population. This thesis contains two distinct studies that contribute to this body of literature - one quantitative and one qualitative – each with separate research aims and questions.

In Study 1 I aimed to assess perceived unmet service needs amongst acute care-seeking PWUD and the utility of the Behavioral Model for Vulnerable Populations for examining unmet needs amongst this population - a framework designed to help understand and predict healthcare seeking patterns amongst socially marginalized groups (164). I derived three research questions and one hypothesis for this quantitative study:

1) What are the perceived unmet service needs of PWUD seeking acute care?
2) What are the key barriers to care amongst acute care-seeking PWUD?
3) How useful is the Behavioral Model for Vulnerable Populations in examining the perceived unmet service needs of this population?
    a. Hypothesis: A full statistical model including all three domains of the Behavioral Model for Vulnerable Populations will best predict high levels of perceived unmet service needs.

In Study 2 I aimed to evaluate the implementation of the supervised consumption service (SCS) at the Royal Alexandra Hospital. Specifically, I sought to understand the perspectives of hospitalized PWUD on the accessibility of the SCS and underlying factors that drive their decisions to access (or not access) this novel service. I addressed one primary research question for this qualitative study:

1) What are the key influences that shape patient decisions to access or not access the acute care SCS?

1.3.1 Overarching Approach

A patient-oriented[3] approach underpins both studies (165). To date, the viewpoints of PWUD have been largely disregarded in health services research. This poses a concern, as the perspectives of patients are integral to high quality health system planning (165). Under a patient-oriented approach, patients are consulted to "provide unique insight into how they experience health care services, how these services affect their health and how these services support them to take control of their own health" (165 p1). Thus, this approach can not only help contribute to health system planning in acute care, but it can also help provide avenues through which PWUD can actively inform service delivery and policy (165). Working closely with patients also helps to ensure that the research process delivers culturally and logistically relevant outcomes (126,127). As such, it was my goal to engage with people with lived experience of illegal drug use as frequently as I could, to ensure that my patient-oriented approach was inclusive and genuine throughout.

I also deemed my thesis to be multimethod as opposed to mixed methods, as it consists of two studies that could stand separately (166). I adopted a critical realist approach to reconcile my overarching research position. Much like constructivist, qualitative approaches, critical realist theory critiques the ability to know reality with certainty, but also acknowledges that some level of objective reality exists and can be empirically observed, such as through positivist, quantitative methods (167). This position was useful, given that positivist and constructivist approaches are both commonly used in drug policy research and can each lead to unique insights, but have conflicting underlying assumptions (167).

1.3.2 Structure of Thesis

[3] The term "patient" is used in this thesis to refer to those using, or who could potentially use, the health service(s) of interest (165).

Chapters 2 and 3 of this thesis detail the two independent studies, each written in a paper-based format. Chapter 2 outlines the first study of this thesis, in which I assessed prevalence of perceived unmet service needs amongst recently hospitalized PWUD and the utility of the Behavioral Model for Vulnerable Populations in predicting unmet needs. Chapter 3 includes the second study, in which I conducted a qualitative focused ethnographic study to examine patient perspectives on accessing a hospital-based supervised consumption service. Chapter 4 concludes by outlining the significance of this research in its entirety, its potential contribution to the academic literature, as well as its clinical and public health importance.

Chapter 2: Perceived Unmet Service Needs of Acute Care-Seeking People Who Use Drugs: A Cross-Sectional Analysis Using the Behavioral Model for Vulnerable Populations

2.1 Introduction

Estimating unmet need for services can help inform health system planning and ultimately reduce disease burden (104). This is especially true for substance use and mental health service systems, which historically have been planned and delivered using normative approaches (e.g., institutional- or clinician-centered) that do not account for prevalence of care needs in a given population (168). Unmet service need is typically estimated by calculating the proportion of those who meet expert-defined diagnostic criteria for a substance use disorder (SUD) but do not access a general or specialized substance use service, relative to the total number of people with a SUD in the population (105). However, studies often calculate unmet needs on the basis of service receipt, despite the fact that the diagnosis of a SUD does not necessarily imply a need for services (109–111). Individuals who do not meet diagnostic criteria for a SUD may also still seek out and benefit from services, and those who receive care may report partial or fully unmet service needs (109,110,118–120).

In response to these challenges, researchers have begun to assess consumer perspectives on substance use and mental health service needs through more client-centered approaches, in particular, perceived unmet needs for care (123). Understanding self-reported needs for substance use and mental health care is a promising approach because health service consumers hold first-hand knowledge regarding their own needs that clinicians and researchers do not (125–127). How individuals perceive their own service needs is an important predictor of whether they will seek care for a SUD or other mental health conditions (115). Consumer-defined approaches

to estimating unmet need may be especially appropriate for understanding the service needs of structurally vulnerable populations who experience stigmatization or discrimination in healthcare settings, as potential bias and power differentials are not generally accounted for in expert-determined estimates of care needs (125).

People who use illegal drugs (PWUD) have historically experienced disproportionately poor health outcomes and excess mortality relative to the general population (47,137,138), in part due to negative experiences with the healthcare system. Conventional healthcare models struggle to effectively address the medical, substance use, and mental health care needs of PWUD while mitigating the impacts of criminalization, racialization, colonization, discrimination, and economic marginalization (1–3). PWUD frequently report high unmet need for substance use and mental health services (4–10,136), experience many barriers to accessing primary care (11–13), and often seek help at acute care hospitals (13–15). Presentations to hospital provide valuable opportunities for helping address the unmet needs of this population (16,17). However, PWUD also face numerous obstacles to accessing substance use and mental health care in hospital settings (1,18,19), and have described hospitalizations as only temporary solutions to their service needs (19). Further, PWUD are at high risk of experiencing premature discharge (e.g., patient led and staff led), delayed care-seeking, and frequent readmissions (1,22,93,102,103), warranting a need for research and policies that can improve acute care service delivery for PWUD (22,23).

Although a better understanding of the self-reported unmet service needs of PWUD at presentation to hospital could help tailor and improve acute care services (141), only a small number of studies have explored the self-reported unmet service needs of PWUD in this context. One study examining general health service utilization patterns amongst PWUD found that

unmet mental health needs were the most common reason for emergency department (ED) presentations (139). Similarly, in a descriptive needs assessment of PWUD at ED presentation, unmet needs for sustenance, housing, and mental health and substance use services were common (140). A larger number of studies have interviewed PWUD to understand their acute care experiences and service needs, in which PWUD frequently describe inadequate pain and withdrawal management, needs for harm reduction interventions (e.g., needle and syringe programs, supervised consumption services), and improved access to substance use treatment (1,19,20,24,77). Overall, the perceived unmet substance use and mental health needs of PWUD who are actively seeking help in acute care hospitals have been poorly documented, and to our knowledge, have not yet been systematically assessed using a standardized instrument.

To address this knowledge gap, we assessed the perceived unmet service needs of acute care-seeking PWUD using the Perceived Need for Care Questionnaire (PNCQ), a reliable and validated instrument (4,169). We specifically aimed to characterize perceived unmet needs for substance use and mental health services, describe self-reported barriers to care, and identify sociodemographic predictors of unmet needs. Overall, we aimed to generate new knowledge on the perceived unmet service needs of PWUD who access acute care to help inform future system planning.

2.1.1 Theoretical Framework

The importance of understanding consumer-defined or self-reported unmet service needs is reflected in the Behavioral Model for Vulnerable Populations (164), which was developed to help identify determinants of care seeking amongst socially marginalized populations. The model expands on Andersen's Behavioral Model (123), which describes factors associated with health service utilization amongst the general population. According to the Behavioral Model for

Vulnerable Populations, a variety of structural and social determinants interact to shape health service seeking, which can be categorized according to their role as predisposing, enabling, or need factors (164) – domains that are theoretically ordered with respect to presumed causal influence on service access. Predisposing factors are causally most distal and often include non-modifiable sociodemographic characteristics (e.g., gender, ethnicity). Enabling factors are medical and social variables that allow or restrict service access, such as personal, familial, and communal resources (e.g., food availability, transportation). Finally, need factors are causally most proximal to service access amongst vulnerable groups compared to the general population, such as blood borne infections and mental health problems (164). Patient experiences, satisfaction, and outcomes then contribute to future healthcare seeking (164).

Employing the Behavioral Model for Vulnerable Populations is a promising approach to understanding the perceived unmet needs of acute care-seeking PWUD, considering the multitude of intersecting structural factors that impede access to health services for this population (1–3). In prior research analyzing perceived unmet needs for outpatient substance use treatment and mental health services amongst PWUD (170–175), the Behavioral Model for Vulnerable Populations has proven to be a useful conceptual guide in explaining and predicting service utilization patterns (164). In this study, we utilized the framework to identify and categorize relevant predictors of unmet need. Given that the model should be generalizable to numerous vulnerable populations (176), we also assessed its utility in predicting unmet service needs amongst participants in our sample. The Behavioral Model for Vulnerable Populations suggests that all three factor domains - predisposing, enabling, and need – interact to influence care seeking (164), so we hypothesized that a full statistical model including factors from all

three domains would best explain perceived unmet service needs, as opposed to a model containing predictors from only one or two of the domains.

2.2 Methods

2.2.1 Original Data Source

We conducted a secondary analysis of survey data collected as part of a larger longitudinal study estimating changes in substance use, healthcare use, health status, and social determinants, amongst inpatients who received usual hospital care versus those who received multidisciplinary addiction medicine care (177). The study took place at three general acute care facilities located in urban, Western Canadian communities between August 2015 and June 2016 (177). The study received ethics approval from the University of Alberta Health Research Ethics Board and the University of Calgary Conjoint Health Research Ethics Board, and was guided by a community-based participatory approach (177). We adopted a similar approach by consulting a community advisory group – comprised of people who have lived experience using drugs – on the design of this later study as well as its findings.

The original survey was interviewer administered to a sample of acute care-seeking PWUD within 14 days of initial hospital presentation (e.g., during inpatient admission or shortly after discharge on hospital grounds) and included a version of the Perceived Need for Care Questionnaire (PNCQ) (169), that we previously adapted to survey the substance use and mental health needs of structurally vulnerable PWUD in a community setting (4). The PNCQ measures general health service utilization for substance use or mental health reasons (4,169). Participants were asked: “In the past 12 months, have you received [X] service because of problems with your emotions, mental health, or use of alcohol or drugs?”; where [X] was separately queried in regards to seven service categories: information, medication, hospital care, counselling, social

interventions (e.g., housing, income), skills training (e.g., for employment), and harm reduction (e.g., to reduce harms associated with substance use). Participants responded: “Yes, in the past 12 months” (perceived need for service), “No, I did not need this kind of help in the past 12 months” (no perceived need for service), or “No, but I think I needed this kind of help in the past 12 months” (perceived unmet need for service). A visual flow chart of PNCQ questions/coding categorization is included in Appendix A.

If participants answered “Yes, in the past 12 months” they were asked “Do you think you got as much [X] care as you needed?”. Participants answered “No,” (perceived unmet service need) or “Yes,” (no perceived unmet service need). A perceived unmet need variable (perceived unmet need vs no perceived unmet need) was calculated for each service category and summed across categories to determine prevalence of unmet needs amongst participants. If participants reported a perceived unmet service need, they were also asked about barriers to care: “Please indicate if each of the following reasons stopped you from getting any or enough help in the past 12 months (Check all that apply)”. Ten potential barriers were included (e.g., I preferred to manage myself; wait list was too long; other text response), which can be found in Appendix B.

2.2.2 Sample

A total of 572 participants were eligible for baseline survey analysis in the original study (defined as survey completion within 14 days of hospital presentation). Initial eligibility criteria included unstable housing, unstable income, and/or active use of alcohol or other drugs as the study was centered on improving the health and well-being of inner-city populations. Exclusion criteria included being less than 18 years of age, unable to speak and understand English, medically or cognitively unstable, unable to give informed consent, and incarcerated or under police supervision. Eligibility and exclusion criteria are described in detail in the original study

protocol (177). Consistent with our overarching aim to understand the specific needs of acute care-seeking PWUD, only those participants who reported illegal drug use (e.g., use of controlled drugs and/or non-medical prescription drug use) were included in our analysis (N = 285). We pooled data collected from both acute care facilities involved in the original study, as unmet service needs did not vary between study sites (N = 285; p = .287).

2.2.3 Measures

2.2.3.1 Primary outcome measure

Given that a large majority of participants reported at least one perceived unmet substance use or mental health service need in this study (n = 242; 84.9%), and the limited clinical utility of this outcome to inform service planning and delivery (e.g., unmet need versus no unmet need), our primary outcome of interest was degree of perceived unmet service need. We created a dichotomous variable defined as no/low level of unmet need (0-2 service categories identified) versus high level of unmet need (3-7 categories identified). Participants with no unmet needs were grouped with those who had one or two given the small proportion of participants who had no unmet needs (n = 43; 15.1%).

2.2.3.2 Secondary outcome measure

Self-reported barriers were divided into motivational and structural categories. Motivational barriers were considered as intrinsic, attitudinal reasons (e.g., I preferred to manage myself; I don't want to get help at this time). Structural barriers were more extrinsic and related to system accessibility (e.g., Wait list was too long/no spaces are available; I was only allowed a limited amount of help). We adapted these motivational and structural categories from the PNCQ instrument in our previous study on unmet needs and barriers to care amongst street-involved

PWUD (4). Similar adapted categories have been used in other research examining perceived needs for mental health care (131,178).

2.2.3.3 Predictor variables

Predictor variables were initially selected based on substance use service literature – especially perceived unmet service need research in the community and population health field – and the Behavioral Model for Vulnerable Populations (164). We then used this framework, the literature, clinical knowledge, and lived experience expertise (via community advisory group consultation) to categorize the selected correlates into appropriate model domains (see Appendix C for illustration). All variables are based on self-report survey data. An abridged version of the baseline survey including questions relevant to variables tested in the current study can be found in Appendix D.

Predisposing factors were considered as primarily non-modifiable, sociodemographic variables (164). This included age (4,115,116,128,129), identifying as a woman (4,116,133,179–182), and Indigenous ethnicity (First Nations, Métis, Inuit) (4,9,77,117,183,184). In this category we also included prior involvement as a perpetrator in at least one criminal activity (e.g., theft; break and enter; assault) (28,62,164,173,185), and adverse childhood experiences known as ACEs (164,186–188) being that these demographics are not modifiable. A local PWUD-informed, adapted version of the standardized ACEs questionnaire (189) included questions about witnessing and/or experiencing abuse, spending time in foster care, and/or being a survivor of Canada's residential school system for Indigenous peoples.

Enabling variables were defined as social and health factors that can permit an individual to secure services. That is, variables that facilitate or restrict access to substance use and mental health services (164). This included precarious housing as defined by transitory sleeping (e.g.,

sleeping in five or more places over the six months prior to data collection) (4,114,130,135,186), living in poverty (≤$24,000 CAD/year) (1,2,28,62–65), not having a regular primary care provider (e.g., family doctor; nurse practitioner) (102,114,130,164,171,173,190), not having a community support worker (e.g., social worker; housing worker) (171,173,191,192), lack of government-issued ID (164,193–196), and any past 6 month experiences of discrimination related to race, ethnicity, or skin colour (20,22,89,91). The Experiences of Discrimination Scale (197) measured racial discrimination related to education, employment, housing, law enforcement, medical care, and in public settings. Consultation with the community advisory group led to the addition of prescription drug coverage in this domain, which is further supported by literature indicating associations between prescription coverage and health service utilization patterns (184,186,198).

Need factors included health conditions and circumstances of special relevance to PWUD compared to the general population (164). We abstracted data regarding self-reported recent (e.g., 6 months) injection drug use (5–7,199), injection and/or non-injection opioid use (5,22,200–202), injection and/or non-injection stimulant use (5,173,202,203), depression (8,116,129,133,179), and HIV and/or Hepatitis C (HCV) seropositivity (204–207). Depression was measured using the validated two-item Patient Health Questionnaire (PHQ-2) (208). Self-reported HIV and/or HCV seropositivity were combined into one variable given HIV seropositivity's comparatively small, nested cell size.

2.2.4 Data Analysis

To characterize perceived unmet needs for substance use and mental health services, we calculated the proportion of participants with perceived unmet needs overall and per each PNCQ service category. We analyzed barriers to care by calculating frequencies of motivational and

structural barriers relative to the most common service categories with unmet needs, as well as across all service categories. “Other” text responses were coded verbatim into barrier categories.

To test the utility of the Behavioral Model for Vulnerable Populations, we applied the theory to our model building. The framework suggests a hierarchical ordering of its domains; the predisposing domain is denoted as the foundational level, and the enabling and need domains can be understood as additive levels (164). Accordingly, we used hierarchical setwise logistic regression in which interrelated predictors were grouped into blocks on a theoretical basis and entered in a step-wise manner (209). We entered predisposing variables first, enabling variables second (after controlling for predisposing variables), and need variables third (after controlling for predisposing and enabling variables). This procedure allowed for identifying the unique contributions of each domain of predictors to identify their relative importance in predicting unmet service needs (209).

All regression assumptions were tested prior to regression analyses (within each domain and across the hierarchical model). Initial bivariate analyses were not conducted as we aimed to test the utility of the theory in its entirety. We also used multiple imputation to handle missing data (210). Results of the regression models report the unadjusted and adjusted odds ratios and 95% confidence intervals for each variable, as well as Wald Chi-Square test statistics and Nagelkerke R^2s for each set of variables entered into the logistic regression equation. We used SPSS Version 26 for all analyses.

2.3 Results

2.3.1 Sample Description

Table 2.1 summarizes participant characteristics by domain of the Behavioral Model for Vulnerable Populations. On average, participants were 38.7 years old (SD±11.5). Fewer than

half identified as women (*n* = 113; 39.7%), and as Indigenous (*n* = 100; 38.6%). The sample was highly marginalized; many reported ACEs (*n* = 234; 82.1%) and living in poverty (*n* = 217; 76.1%). Some also reported transitory sleeping (*n* = 118; 41.4%) and involvement in crime (*n* = 113; 39.6%). Many were not connected to regular community support workers (*n* = 198; 69.5%), and some were not connected to regular primary care providers (*n* = 113; 39.6%). About one-third had no government ID (*n* = 103; 36.1%) or prescription drug coverage (*n* = 82; 28.8%). Over half reported experiences of racial discrimination in the past 6 months (*n* = 162; 56.8%). Stimulant use (*n* = 239; 83.9%), opioid use (182; 63.9%), and injection drug use (*n* = 159; 55.8%) were common. A few participants (*n* = 14; 4.9%) reported using prescription drugs non-medically (benzodiazepines, bupropion, ketamine, inhalants, GHB, and/or hallucinogens). Finally, many participants met PHQ-2 criteria for depression (*n* = 176; 61.8%), and one-third reported living with HIV and/or HCV (*n* = 11; 35.1%).

Table 2.1 Self-reported characteristics of acute care-seeking people who use illegal drugs (*N* = 285).

Predisposing factors	**n**	**%**	**Mean**	**Range**
Age			38.7 (SD±11.5)	18-69
Female gender	113	39.7		
Indigenous ethnicity*	100	38.6		
History of criminal activity	113	39.6		
Adverse childhood experience(s)	234	82.1		
Enabling factors				
Transitory sleeping	118	41.4		
Living in poverty (≤$24,000 CAD/yr)	217	76.1		
No regular primary care provider	113	39.6		
No regular community support worker	198	69.5		
No government-issued ID	103	36.1		
Experiences of racial discrimination	162	56.8		
No prescription drug coverage	82	28.8		
Need factors				
Injection drug use	159	55.8		
Opioid use	182	63.9		
Stimulant use	239	83.9		
Depression	176	61.8		
HIV and/or HCV seropositivity	100	35.1		

* Participant self-identified as First Nations, Inuit, or Métis

2.3.2 Perceived Unmet Service Needs

Amongst our sample of acute care-seeking PWUD, 277 participants (97.2%) reported past-year perceived needs for care related to mental health or substance use problems, and most participants (n = 258; 90.5%) reported receiving at least one service. However, most participants had an unmet need in at least one category (n = 242; 84.9%), and almost half of the sample had high levels of unmet service needs (n = 132; 46.3%). Counselling (n = 160; 56.1%) and social interventions (n = 143; 50.2%) were the most commonly reported service categories in which participants had unmet needs (Table 2.2).

Table 2.2 Prevalence of substance use and mental health service needs amongst acute care-seeking people who use illegal drugs (N = 285).

Category	Yes		No	
	n	%	n	%
Perceived need for at least one service category	277	97.2	8	2.8
Received service for at least one service category	258	90.5	27	9.5
Perceived unmet need for service in at least one category	242	84.9	43	15.1
High level of perceived unmet need for services*	132	46.3	153	53.7
Perceived unmet need for counselling	160	56.1	125	43.9
Perceived unmet need for social interventions	143	50.2	142	49.8
Perceived unmet need for information	107	37.5	178	62.5
Perceived unmet need for medication	92	32.3	193	67.7
Perceived unmet need for skills training	89	31.2	196	68.8
Perceived unmet need for hospital care	82	28.8	203	71.2
Perceived unmet need for harm reduction	39	13.7	246	86.3

*Perceived unmet needs for 3 or more service categories.

2.3.3 Predictors of High Perceived Unmet Service Needs

Table 2.3 displays the results of our logistic regression in which we imputed predisposing factors first, enabling factors second, and need factors third. The results of the multiple imputation analysis were similar to the analysis without multiple imputation. As a result, we report the multiple imputation results here.

All three models were statistically significant ($p<0.05$), and Nagelkerke R^2 statistics for each model improved consistently with the addition of each domain. When we imputed only predisposing factors, we found that 8.0% of the variability in high perceived unmet service needs was accounted for by the model. This statistic increased two-fold to 16.0% with the addition of enabling factors, and up to 24.0% with the input of all three domains.

We also identified which variables amongst the three domains were most salient in predicting high level of perceived unmet service needs. In the predisposing domain, history of criminal activity (AOR = 1.92 [1.15,3.19]) and ACEs (AOR = 2.78 [1.36,5.68]) were significantly associated with high levels of unmet needs. Note that when we had not yet accounted for need variables in Step 2, history of criminal activity was not a significant predictor. When we added need variables to the model, criminal activity once again emerged as a significant predictor. In the enabling domain, transitory sleeping (AOR = 2.06 [1.20,3.53]) and not having a regular community support worker (AOR = 1.89 [1.05,3.41]) were significant. Only depression was a significant predictor of unmet needs within the need domain (AOR = 3.36 [1.88,6.0]).

Table 2.3 Hierarchical setwise logistic regression results predicting high level of perceived unmet needs for mental health and substance use services amongst a sample of acute care-seeking people who use illegal drugs ($N = 285$).

Variables entered	**Unadjusted OR [95% CI]**	**Step 1: Predisposing factors** Wald $\chi^2 = 18.1^{**}$ Δ Nagelkerke R^2 = .08	**Step 2: Enabling factors** Wald $\chi^2 = 18.8^{**}$ Δ Nagelkerke R^2 = .08	**Step 3: Need factors** Wald $\chi^2 = 20.20^{**}$ Δ Nagelkerke R^2 = .08
Age	0.99 [0.97,1.01]	0.99 [0.97,1.01]	0.99 [0.97,1.02]	1.00 [0.97,1.02]
Female gender	1.29 [0.80,2.08]	1.10 [0.65,1.84]	1.24 [0.71,2.16]	1.21 [0.68,2.16]
Indigenous ethnicity†	1.13 [0.70,1.82]	0.92 [0.55,1.54]	0.67 [0.37,1.24]	0.63 [0.33,1.20]
History of criminal activity	1.99** [1.22,3.25]	1.92* [1.15,3.19]	1.60 [0.91,2.79]	1.83* [1.00,3.34]
History of adverse child experience(s) (ACES)	2.70** [1.36,5.37]	2.78** [1.36,5.68]	2.56* [1.20,5.46]	2.38* [1.07,5.33]
Transitory sleeping	2.79** [1.72,4.54]	---	2.06** [1.20,3.53]	1.99* [1.13,3.51]

Living in poverty (≤ $24,000CAD/yr)	0.96 [0.56,1.66]	---	1.15 [0.62,2.13]	1.04 [0.54,2.00]
No regular primary care provider	1.35 [0.84,2.17]	---	1.19 [0.69,2.04]	1.13 [0.64,2.00]
No regular support worker	1.71* [1.02,2.87]	---	1.89* [1.05,3.41]	2.10* [1.12,3.92]
No government-issued ID	1.22 [0.75,1.99]	---	0.99 [0.56,1.75]	0.93 [0.50,1.71]
Experiences of racial discrimination	1.89** [1.17,3.06]	---	1.63 [0.92,2.90]	1.47 [0.80,2.68]
No prescription drug coverage	1.05 [0.63,1.76]	---	0.84 [0.46,1.54]	0.77 [0.40,1.49]
Injection drug use	0.89 [0.56,1.42]	---	---	0.98 [0.52,1.85]
Opioid use	1.51 [0.93,2.47]	---	---	1.11 [0.61,1.99]
Stimulant use	1.03 [0.55,1.95]	---	---	0.69 [0.33,1.44]
Depression (PHQ ≥ 2)	3.59** [2.13,6.05]	---	---	3.36** [1.88,6.0]
HIV and/or HCV seropositivity	0.92 [0.57,1.50]	---	---	1.17 [0.59,2.32]

* $p < .05$
** $p < .01$
† Participant self-identified as Aboriginal, Metis, or Inuit

2.3.4 Barriers to Care

There were 1379 responses regarding barriers to care from the 242 participants who reported at least one perceived unmet service need (Table 2.4). Overall, structural barriers to care were more commonly reported (790 responses; 57.3%) than motivational barriers (589 responses; 42.7%). The most common reason for unmet need for one or more services was "I was only allowed a limited amount of help" followed by "I asked but I didn't get help." Barriers to counselling were equally split between structural and motivational reasons with 156 responses each, and "I preferred to manage myself" was the most commonly reported reason for having unmet needs for this service. Reasons for unmet social intervention needs were mainly structural (177 responses; 63.0%). "I was only allowed a limited amount of help" was the most commonly reported barrier for this service.

Table 2.4 Reasons for perceived unmet need for care calculated across services (total responses), for counselling, and for social interventions, amongst a sample of acute care-seeking people who use illegal drugs (n = 242).

Barrier to care	Total responses (*n* = 1379)*		Barriers to counselling (*n* = 312)		Barriers to social interventions (*n* = 281)	
	n	%	n	%	n	%
Motivational barriers						
I preferred to manage myself	149	10.8	37	11.9	28	10.0
I didn't think anything would help/nothing can help me	82	6.0	21	6.7	14	5.0
I don't want to get help at this time	100	7.2	25	8.0	11	3.9
I was afraid to ask for help or what others would think of me	113	8.2	30	9.6	21	7.5
Other motivational barriers (based on text)	145	10.5	43	13.8	30	10.7
Totals	589	42.7	156	50.0	104	37.0
Structural barriers						
Wait list was too long/no spaces are available	104	7.5	20	6.4	32	11.4
I was only allowed a limited amount of help	163	11.8	27	8.7	34	12.1
I couldn't afford the money	101	7.3	25	8.0	20	7.1
I asked but I didn't get help	156	11.3	21	6.7	34	12.1
I didn't know where to get help	126	9.1	27	8.7	29	10.3
Other structural (based on text)	140	10.2	36	11.5	28	10.0
Totals	790	57.3	156	50.0	177	63.0

*Participants could indicate more than one barrier to perceived unmet needs.

2.4 Discussion

A large body of evidence indicates a disproportionately high prevalence of perceived unmet service need for substance use and mental health concerns amongst PWUD. However, the perceived unmet needs of the acute care-seeking subpopulation of PWUD have not been well documented. Overall, our aim was to generate new knowledge on this cohort to help inform future hospital service planning. We specifically characterized perceived unmet service needs, described self-reported barriers to services, and examined sociodemographic predictors of unmet needs. We further adopted the Behavioral Model for Vulnerable Populations as a framework to examine predictors and tested its utility for quantifying unmet needs amongst this group of PWUD.

Despite nearly all participants reporting a need for at least one service related to mental health or substance use problems, and most reporting receiving services, a majority of participants reported an unmet care need in at least one service category, and many met criteria for a high degree of unmet service needs. These findings are similar to those observed in non-acute, community-based samples (4–10,136), and in particular, the findings of prior work conducted by members of our team, in which a group of street-involved PWUD was surveyed (4). Half of the sample included in our current study was from the same city – Edmonton, Canada – as our community-based sample (4). Such similarities may partially be explained by evidence indicating that PWUD regularly seek care at hospitals, especially EDs, as a result of poor accessibility to primary care (13–15). Indeed, in the current study some lacked connections to primary care providers, and many did not have community support workers. Lack of community support workers also emerged as a significant predictor of high unmet need.

Our findings also underscore the significance of systemic barriers on access to substance use and mental health services for PWUD, as predominant reasons for unmet service needs were mainly structural. Despite seeking help, participants generally reported receiving an inadequate amount of assistance or none at all. Although Canadian PWUD have access to universal healthcare, the narrow scope of Canada's healthcare insurance model poses unique challenges for structurally vulnerable populations, including PWUD. Coverage for mental health and substance use conditions is largely dependent on provincial guidelines and individuals' access to extended benefit plans (e.g., via employers). For example, in the province of Alberta, the government does not publicly fund counselling services (211). However, being that affordability was not a commonly reported barrier to care amongst participants, our finding could be attributed to long wait list times associated with publicly funded Canadian mental health and

substance use services (212,213). Further, social programs - such as income support and housing services - may not necessarily recognize SUDs as a long-term condition that when considered alone, meets requirements for disability supports (214–216).

Together, these findings support a need for hospital-based interventions that can help overcome structural barriers to care for substance use and mental health concerns, and ultimately address the unmet needs of PWUD. Wider access to multidisciplinary addiction medicine consult teams (AMCTs) is one potential strategy. Recent studies have demonstrated that inpatient AMCTs can help connect PWUD with community-based services including primary care, housing supports, government ID registries, income assistance programs, and substance use treatment (156,217). In some settings, implementing these individual services (e.g., housing programs) directly in-hospital may also be warranted and feasible. Future research should systematically investigate the potential impacts of these new interventions, such as AMCTs, that intend to address the unmet service needs of hospitalized PWUD, especially for social services and counselling.

Finally, our study confirms the utility of the Behavioral Model for Vulnerable Populations in predicting unmet service needs among a new subpopulation of PWUD (i.e., those seeking acute care). As hypothesized, including variables from all three domains of the framework (predisposing, enabling, and need factors) in our modelling best explained perceived unmet service needs, and variance statistics were found to improve consistently with the addition of each domain. This finding is not surprising, considering the array of intersecting vulnerabilities that can obstruct health service access for PWUD (2,3). However, variance explained by the full model was limited to approximately one quarter of all variance, leaving three quarters of perceived unmet needs unexplained.

Other potentially important predictors not tested here could include chronic health conditions (physical and mental), social and familial supports (168), sexual risk behaviors (173,175), education, employment, and lifetime and current victimization (181,184). In other North American contexts, it may also be useful to extend a race/ethnicity variable to include other racialized groups in addition to those who identify as Indigenous. Further, two dimensions of the framework that we did not integrate were community-level enabling factors and competing needs (164). Given the extent to which our sample was structurally vulnerable, it may have been useful to include information on accessibility of local social supports outside of the hospital (e.g., density and appropriateness) (175,193) and whether basic needs for food, shelter, and safety were competing with service needs (175,186). Future research using this framework to examine the unmet needs of structurally vulnerable PWUD should account for these possibilities.

Although our predictor variables were highly interrelated, our unique findings on criminal histories, symptoms of depression, and ACEs as predictors of high unmet needs also warrant discussion. Transitions between incarceration and the community, as well as criminal record-based discrimination have been well documented to impact substance use and mental health service utilization amongst PWUD (1,3,185,218), and may point to the importance of ensuring that hospitals are welcoming spaces to better meet the needs of this patient population (20,77). For example, PWUD have described feeling intense discriminatory inspection and monitoring during their stays (e.g., undergoing frequent searches by staff and security, having substances confiscated upon admittance), making hospitals feel like “jails” or “prisons” rather than places of healing (20 p7). Reshaping drug policy more broadly, such as by decriminalizing

illegal substances (219), may further help improve access to substance use and mental health services for this population (20,81,82).

Prior work also supports our finding on depression as a predictor of high unmet need, with a large number of studies identifying particular unmet needs for counselling and medication amongst individuals with mental health problems (8,220). In a major systematic review by Prins et al. (220), patient–provider rapport was identified by participants as an important feature of high quality depression care, which may further support a need for creating a safe, patient-centered hospital environment. Finally, the ACEs questionnaire we used was tailored to the demographic of PWUD in Western Canada, as Indigenous peoples (First Nations, Inuit, Métis) experience disproportionate rates of harms associated with substance use relative to the general Canadian population (30). Our finding on ACEs as a significant predictor thereby supports an ongoing need for acute care settings to address and enhance cultural safety in both policy and practice (221). Together, our results on ACEs and depression point to the role of comorbid mental health problems as a particularly important issue to consider when planning and providing acute care services for PWUD.

2.4.1 Limitations

There are several limitations of our study. First, we conducted a *post hoc* analysis; the data analyzed was not originally collected for the purpose of the current study or to test our hypothesis (222). The original study also employed non-probability sampling methods and therefore our findings may not necessarily be generalizable to all acute care-seeking PWUD, especially those outside of urban areas of Western Canada. Our sample is also limited in that it only included PWUD that were seeking hospital care; we did not have comparison data from PWUD not actively seeking care. It is possible that the subpopulation of PWUD who seek acute

care have distinct service experiences and needs compared to the more general population of PWUD. The survey data is further self-reported and thereby subject to recall bias (e.g., underreporting or overreporting). However, the reliability and validity of using self-report measures with PWUD has generally been verified (223), and in the context of the current study best aligned with our objective to examine consumer perspectives.

Lastly, although a cross-sectional design was well suited for our study purpose, it is not possible to infer temporality or causation between sociodemographic predictors and our outcome, only associations (224). Although all assumptions passed muster for our statistical testing, it is further important to note that our analysis grouped interrelated variables (164). Public health evidence demonstrates that it is the intersections of social and structural factors that impact substance use and mental health service access, and examining only discrete factors can risk overlooking these connections (225). Our regression findings on individual variables should therefore be interpreted carefully, and focus should be placed on our overall results.

2.4.2 Conclusions

Our research contributes new knowledge on the perceived unmet substance use and mental health service needs of acute care-seeking PWUD, offering unique insights that may help inform improvements to hospital service delivery and related health and social policy. Our study adds to the acute care evaluation literature on a theoretical basis, as we explicitly applied and tested the Behavioral Model for Vulnerable Populations. As anticipated, a statistical model including variables from all three domains of the framework (predisposing, enabling, and need factors) best explained perceived unmet service needs. However, more work is needed to examine the substantial amount of variance that was left unexplained by our regression model.

Finally, our findings suggest that the perceived unmet service needs of acute care-seeking PWUD may be similar to those surveyed in community and population health studies, which could reflect broader health service utilization patterns amongst this population. Improving inpatient and ED policy to meet the specific needs of PWUD – especially for counselling and social services – could prove to be an effective means in helping address the overall needs of this group. On this basis, in-hospital interventions that are designed to mitigate structural barriers to services for PWUD, such as wider provision of AMCTs, are warranted.

Chapter 3: "The Nurses Could Have Walked in on Me Dead": Patient Perspectives on Accessing an Acute Care Supervised Consumption Service

3.1 Introduction

People who use illegal drugs (PWUD) seek acute care at disproportionately higher rates than members of the general population. A meta-analysis of studies from North America and Australia found that PWUD have emergency department visits and hospitalization rates 4.8 and 7.1 times that of the general population, respectively (73). Despite frequent acute care seeking, PWUD often struggle to have their medical and social needs met during hospital admissions (24,88,103). Hospitals have been described as criminalized spaces that enforce formal or informal bans on illegal substance use (20,21). Evidence demonstrates that a significant proportion of hospitalized PWUD continue to use drugs irrespective of these policies (21), and that prohibitions on substance use contribute to a high risk hospital environment for this patient population (20,21,24,80,163).

PWUD frequently report consuming drugs alone, in concealed areas of the hospital (e.g., washrooms), and with unsterile harm reduction supplies (20,21,80,83). Getting caught using drugs can lead to involuntary discharge by staff, bans from hospital by security, and in some settings, even arrest by local police (20). Mutual mistrust between PWUD and hospital staff has also been well documented. PWUD are often perceived by staff as untrustworthy and undeserving of high quality healthcare (24,88). Likewise, PWUD cite experiences of stigmatizing and discriminatory care, such as judgement from staff for their drug use, and inadequate pain and withdrawal management (20,24,163). These experiences amplify risk of leaving against medical advice and premature discharge, can deter care seeking in the future (20,77), and perpetuate deep-rooted mistrust in healthcare systems (20,88,163). Indeed, in-

hospital injection drug use has been found to be independently associated with premature discharge, frequent readmissions, and excess mortality (100). Together, these concerns warrant the need for interventions that can improve the acute care environment for PWUD (22,23), and that can especially promote hospital retention (20).

The provision of hospital-based supervised consumption services (SCS) may be one strategy (20,81,82). SCS are decriminalized, safe, and clean healthcare facilities in which legal or illegal drugs can be consumed under the supervision of trained staff, (e.g., nurses) (142–144). In community settings, SCS minimize risk of blood borne infection transmission and overdose death (e.g., via naloxone administration, response to cardiac arrest) (143,144). SCS also help decrease substance use in public spaces and improve public order without increasing drug-related crime (143,144). However, there is currently a paucity of SCS integrated into the acute care setting and a lack of associated clinical and academic research.

To our knowledge, the Royal Alexandra Hospital SCS in Edmonton, Canada is the only SCS globally that specifically serves hospital patients (153). Although it has been suggested that SCS in acute care may help improve patient-provider relationships, mitigate pressures to conceal substance use, and minimize risk of harms to hospitalized PWUD (80,82,154), other research demonstrates that integrating harm reduction services into acute care can be a difficult and lengthy process (155). For example, studies of a harm reduction-oriented addiction medicine consult team (156) and an inpatient needle exchange program (157) have reportedly been impeded by informal bans on substance use and incongruous hospital culture. It is possible that drug law enforcement (68,83,158) and conflicting staff attitudes would also hinder hospital SCS provision (1,80,157).

To address this knowledge gap, we are evaluating the implementation of the Royal Alexandra Hospital SCS. The present study focuses on patient perspectives of SCS provision. A first step in evaluating any health intervention is understanding its accessibility and identifying barriers and facilitators to actual service utilization (226). Understanding factors that facilitate or impede SCS uptake in acute care is especially vital considering the potential for discordance between the hospital environment - which has historically promoted abstinence and formal or informal bans on illegal drug use - and the harm reduction goals of SCS (80,157). Therefore, our specific aim was to identify key influences shaping patient decisions to access or not access the hospital SCS, to help inform quality improvements, future uptake, and implementation of SCS in other similar acute care facilities.

3.2 Methods

3.2.1 Overview of the Acute Care Supervised Consumption Service

The Royal Alexandra Hospital (RAH) is located in a socio-economically marginalized health services catchment in Edmonton, Canada (153). In April 2018, the RAH implemented an SCS in response to staff concerns regarding patient drug use and overdose events, high overdose rates in the community (227), and an increasing, disproportionately high number of ED visits related to substance use compared to other local hospitals (228). The SCS was developed with the input of PWUD, medical and harm reduction experts, and hospital staff (e.g., frontline staff, senior leaders). The RAH SCS is federally exempted under Section 56.1 of the Canadian *Controlled Drugs and Substances Act*, which permits the use of controlled substances under medical supervision (142).

During this study, the RAH SCS was available daily (except during staff breaks between 1130–1230 and 1800–1900) to inpatients and triaged ED patients, and had four booths in which

patients could inject, ingest, or insufflate pre-obtained illegal substances (153). The SCS was not equipped for inhalation as retrofitting the hospital for ventilation was deemed potentially cost prohibitive. Most patients accessing the SCS were connected to the hospital's addiction medicine consult team (AMCT) (see 156 for details), and were referred to the SCS by the AMCT. Patients completed a consent process upon their first SCS visit each hospital admission (153).

During subsequent visits in a given hospital admission, patients provided their name (to confirm their status as a registered patient of the hospital) and information about what type of pre-obtained substance they were going to use, as well as their route of consumption (e.g., injection). Staff then provided sterile harm reduction supplies and monitored patients for signs of overdose. Patients were encouraged to stay for a 20-minute observation period before returning to their unit. SCS use was documented and hospital wards were notified of the patient's visit to help promote management continuity and patient safety outside of the SCS (153). The RAH SCS model has been described in detail elsewhere (153).

3.2.2 Design and Procedures

We adopted a focused ethnographic design - a subtype of ethnography that is commonly used to examine a particular problem amongst a small group of people (166). While traditional ethnography aims to broadly understand culture, focused ethnography often focuses on a distinct context (166) and is employed in healthcare research when the findings can be easily applied to practice (229). As such, focused ethnography was well-suited for our study, as it enabled understanding of patients' experiences involving the acute care SCS, and best generated information for clinical guidance. To maintain methodological coherence, the study was conducted in parallel with the relativist ontology and the subjectivist epistemology (166).

From May to November 2019, semi-structured interviews were conducted with 28 patients who were offered access to the SCS and had either declined or accepted the opportunity to do so. AMCT staff approached a diverse range of SCS eligible patients (e.g., with different ages, genders, substance use patterns) about study participation. Interested patients were then referred to our research team to further discuss the possibility of participating and to provide informed consent. Sample characteristics are provided in Table 3.1. Participant substance use characteristics (not specific to within the RAH SCS) generally aligned with basic SCS program statistics. From April 2, 2018 to November 30, 2019, opioids were more commonly consumed compared to stimulants (87% and 13% of total substances, respectively), and most substances were consumed intravenously (96%) (153). There were 7856 SCS visits by 199 unique patients during this time (153).

Table 3.1 Sample characteristics ($N = 28$).

Use of supervised consumption service during a hospital admission	
Yes	20 (71%)
No	8 (29%)
Age	
Mean	36 years (SD 9.6; Range 23–65)
Gender	
Woman	13 (46%)
Man	15 (54%)
First Nations, Inuit, or Métis	
Yes	16 (57%)
No	12 (43%)
Substance use duration	
Average	18 years (SD 7.3; Range 2-30)
Primary substance used	
Opioids	18 (64%)
Stimulants	8 (29%)
Opioids and stimulants equally	2 (7%)
Preferred route of consumption	
Intravenous	21 (75%)
Inhalation	6 (21%)
Insufflation	1 (4%)

Interviews were audio-recorded and conducted in a location of the participant's choice that permitted confidentiality (e.g., patient rooms, sitting areas). Interview questions (Appendix E) elicited information about patients' substance use, barriers and facilitators to SCS delivery, service impacts on patient care, associated perceived health outcomes, and recommendations for service improvement. On average, interviews lasted 57 minutes and were deidentified and transcribed verbatim using pseudonyms for patients and staff. Participants received a $30.00 CAD honorarium.

Interview transcripts were managed using ATLAS.ti and examined using latent content analysis (166). We began by coding the interview data with specific attention to participants' motivations for attending or not attending the hospital SCS. Codes were then clustered to form categories based on similarity, and categories were grouped into main themes describing factors that shaped SCS uptake (166,230). Data analysis and interviews were conducted concurrently to help refine probes for remaining interviews and to guide an iterative analysis (166).

Key strategies to ensure rigour included purposeful sampling (i.e., by speaking with patients who have been offered to access the SCS); use of an audit trail and field notes (e.g., to reflect on how decisions were made and engage in reflexivity); close examination of negative cases during analysis (i.e., contrasting outlier cases/codes with dominant findings), and regular discussions and debriefing within our research team, who have experience conducting research with this population and using similar methods (231). We also engaged in double-coding, in which a second member of our research team reviewed the codebook and transcripts for coherence and accuracy. The findings were also member checked by engaging with a community advisory group, comprised of people with lived experience of illegal drug use and

hospitalizations. Members of the advisory group approved the study protocol and confirmed our interpretation of the data.

The data source for this project is a larger, multi-method study that received ethics approval from the University of Alberta Health Research Ethics Board and operational approval from Alberta Health Services via the Northern Alberta Clinical Trials and Research Centre.

3.3 Results

Participants described using illegal substances in the hospital for a variety of reasons, such as to maintain routine and to help cope with emotional pain or trauma. More than half of participants reported taking substances in hospital for withdrawal and physical pain management. Despite nearly all participants reporting in-hospital substance use since the opening of the SCS, and all having been offered access to the service, not all participants had attended it. Of the 28 participants, 20 reported using the hospital SCS during hospital admission. Amongst those who had used the SCS, service use frequency varied from “a few times,” to “sometimes,” to multiple times daily. Approximately two thirds of participants who had used the SCS described doing so consistently.

To gain understanding on why some patients may access SCS in acute care while others may not, below we discuss factors that shaped participant decisions to attend the hospital SCS. We present reasons for accessing the hospital SCS first, and reasons for not accessing the service second. Verbatim quotes are provided to highlight key points throughout.

3.3.1 Section 1: Reasons for Accessing the Supervised Consumption Service

3.3.1.1 "I would've probably been in a bathroom stall somewhere": Reducing risk of harm for patients and staff

All participants who accessed the SCS described doing so to help protect against negative health outcomes while using drugs in hospital, as the SCS provided an array of harm reduction services. Most notably, nearly all of these participants described using the SCS for emergency overdose care. Participants emphasized that the SCS helped them avoid potential overdose alone or in concealed areas of the hospital, including washrooms, patient rooms, parkades, and stairwells. For example, "Emily" told us that she experienced an overdose at the SCS, and described that if she had not been there that she could have overdosed alone in her patient room.

> [I]f I decide to do that in my room like, I could totally do a shot in here. Nobody would even fucking know . . . The nurses could have walked in on me dead. – "Emily"

Similarly, "Russell" described that he could have overdosed in a hospital washroom.

> It's literally saved my life . . . If I wasn't there, I would've probably been in a bathroom stall somewhere. – "Russell"

Many were also drawn to the SCS to be able to use sterile harm reduction supplies, such as needles, to help prevent drug-related harms (e.g., blood borne infection transmission, injuries from needle reuse). Some of these participants told us that sterile supplies were otherwise difficult to acquire during hospital admissions. As "Jacob" and "Ashley" described:

> [The AMCT peer support worker] asked me if I still do drugs and if I still do intravenous drugs . . . they'll supply me with clean everything, which I didn't have. I had dirty stuff on me. – "Jacob"

> It's clean . . . It gives people more opportunity rather than going and do it on the streets. . . They have no supplies, sharing needles. – "Ashley"

Some participants who used the SCS accepted additional supplies for outside of the SCS, primarily for preventative reasons including for times when getting to the SCS could be physically too difficult (e.g., too far from their patient room; too sick). Of the participants who

had *not* used the SCS, only one described getting supplies there regularly, as they preferred to go off hospital property to consume drugs. Three others who had not accessed the SCS described having supplies given to them by the hospital AMCT. Remaining participants were either attempting to abstain from substance use at the time of the interview or detoxing, had no access to money or substances during their hospitalization, or brought their own supplies in preparation for their stay.

Lastly, some accessed the SCS in order to safely dispose of used harm reduction supplies. These participants discussed feeling that they had to hide clean and used supplies in their patient rooms (e.g., in drawers, in sides of beds), and some described flushing used supplies down hospital toilets. Ultimately, these participants discussed using the SCS to help minimize risks of needle and syringe "pricks" for themselves as well as for hospital staff, other patients, and visitors. For example, "George" told us that he was primarily concerned about hospital staff experiencing any injuries from unsafely disposed needles.

> Totally safer for everybody . . . nobody is going to get pricked, especially the nurses and stuff like that by someone's dirty needle. – "George"

3.3.1.2 "You don't have to squirrel away in a staircase and risk getting caught": Avoiding formal and informal sanctions

Many participants who had used the SCS described accessing it to avoid formal or informal sanctions for consuming substances in and around hospital grounds. According to participants, using the SCS especially helped circumvent pressures to "hide" or "sneak around" public areas of the hospital (e.g., washrooms, parkades). These participants worried that they could "get caught" by authorities (e.g., security, police) or hospital staff. In contrast, the SCS permitted privacy and allowed for time to take drugs more safely and with less anxiety. When

asked if he sometimes took his drugs elsewhere in the hospital (outside of the SCS), "Russell" shared that he did not because the SCS helped him avoid detection.

> I don't . . . the cops can't bother you there . . . the cops aren't even allowed to, you know, bother you, search you . . . So, it's really nice not to have to look over your shoulder and there's nowhere else really that I can think of . . . where you could do that right? Sit down and get comfortable, just do your dope, right. – "Russell"

Much like "Russell," most participants reported accessing the SCS specifically to avoid confrontations with local authorities, including hospital security, peace officers, and police. Participants described that "getting caught" could lead to getting "kicked out" of the hospital or "banned" from the facility, and that they needed to stay in hospital to complete their medical treatment. For example, "Ashley" told us about how using the SCS helped her avoid getting "kicked out" of the hospital.

> You don't have to squirrel away in a staircase and risk getting caught and getting kicked out of the hospital. Because if they catch you doing dope where you're not supposed to, they'll just kick you out. – "Ashley"

Many who had used the SCS further described doing so to avoid potential risk of arrest for using or carrying controlled substances on hospital grounds (e.g., in patient rooms, washrooms, parkades, stairwells, etc.). For example, "Philip" told us that he had been incarcerated in the past, and explained that using the SCS helped minimize risk of this occurring again, which alleviated some worries during his hospital stay.

> [I]t's safer. I don't have to worry about anything. And when you have a safe, secure place to get high at, a lot of the mental stress of being caught or going to jail, it's alleviated. – "Philip"

In addition to concerns about authorities, some participants went to the SCS after being warned against on-unit substance use by nurses or other hospital staff (e.g., physicians). Participants explained that hospital staff either sternly or gently told them to not consume illegal

drugs on the unit, and indicated that if they needed to use illegal substances, they should attend the SCS instead. As "George" experienced:

> [B]efore I went over to the SCS for the first time, I used in my room . . . And I think I nodded out for a bit and I had something left on my tray . . . so I kind of got shit. . . "If you want to use or whatever, use over there." – "George"

3.3.2 Section 2: Factors Hindering Supervised Consumption Service Uptake

3.3.2.1 "There's a catch here": Abiding fear of local drug law enforcement

While many participants sought protection from formal or informal sanctions at the SCS, others were not convinced that they could avoid detection, and fears of drug law enforcement deterred some from using the hospital SCS. Many participants cited low trust in the intentions of the service, describing that they thought it could be a "trap" with ulterior motives. As "Rachel" said, "I was like well, there's a catch here like. Cops are going to [be] waiting or security's going to kick me out."

Others who *had* used the SCS told us that this fear delayed their service uptake. For example, "Joy" initially did not believe that the SCS had genuine intentions. She told us about a conversation that she had with her friend before she had used the hospital SCS, in which her friend tried to convince her that the SCS was safe to use.

> At first, I thought people were lying to me [laughs]. Like as if, and [my friend's] like "No, you can carry your dope and put it in the safe [in your patient room]." I'm like . . . "They're just going to call the cops and get arrested you idiot." "No, I've actually went there and done it!" "Why would you do that? Now they're going to follow you around because they're going to wait until you get a bunch of dope and then they're going to arrest you then." – "Joy"

Despite the hospital SCS being federally exempted under Section 56.1 of the *Controlled Drugs and Substances Act* - which protects patients from drug-related criminal sanctions (142) - these participants further described fearing that they could experience conflict with authorities if

they were to visit the hospital SCS. Some had concerns about potentially having drugs confiscated, being prematurely discharged and/or banned from the hospital, or being subject to arrest if they were to visit the SCS. “Rebecca” and “Christine” explained:

> Who’s going to show up there and whip out a bunch of drugs to shoot up? . . . ‘Cause they probably don’t want to get in trouble or caught with their drugs and get it taken away. – “Rebecca”

> [T]hey’re used to being in alleys on their own by themselves . . . [I]t’s a no-no to everybody, it’s a bad thing . . . Like, if you were to lock yourself in the bathroom, security is to catch you injecting in the bathroom, you’d get kicked off the property. They’d be scared to get charged for [going to the SCS], you know? Yeah, that’s the big fear. – “Christine”

3.3.2.2 "On the way to the injection site I’m smoking dope": Limitations of service offerings

Many participants also described that SCS uptake was restricted by several rules and policies, particularly SCS eligibility requirements and limited support for drug consumption via inhalation. At the time of these interviews, consumption in the SCS was only available to registered inpatients and triaged emergency department patients. Consequently, some participants did not use the SCS because they could not take drugs with their partners, family members, or friends who visited them in the hospital. Participants did not want loved ones using drugs alone, and sometimes prioritized the safety of these visitors over going to the SCS by themselves. “Dianne” explained that sometimes when she had visitors, she would go into hospital washrooms with them because she worried about them potentially overdosing alone.

> [I]f you’re with somebody . . . and if they’re not a patient here . . . they’re not going to wait to get over [to a community-based SCS], they’re going to dip in here and go use the washroom right. And if they’re doing heroin and, because we don’t know right. There’s been like how many people have gone down . . . So, sometimes to go in with them it’s okay. I think it’s okay. – “Dianne”

Or as “Rhianna” described:

> I have friends who bring me stuff, right? So that I don't get sick or that want to share with me, right? And you can't take them there and do it there where it's safe . . . We got to go and hide somewhere in the bathroom and get caught . . . [I]t just doesn't make any sense. – "Rhianna"

Most participants perceived that any remaining illegal drug use outside of the SCS - in and around hospital grounds - was primarily occurring amongst non-patients (e.g., visitors, members of the community). While many suggested opening the service to the wider community, some felt that the hospital SCS should only be available to registered patients. These participants worried that the hospital and/or the SCS could become too busy, or that their safety in hospital could be compromised if it were open to the wider community. For example, "Malcom" told us that he preferred the SCS stay available for patients only.

> I stay by myself for the most part and I'm not affiliated with any gangs or anything like that . . . I don't think the hospital should have that mix . . . I think it would be too much. It's a safe place[.] – "Malcom"

Some participants also reported not being able to use the SCS as it could not accommodate drug inhalation. This regulation prevented uptake for three of the eight participants that had not used the SCS, while six others who had used the service reported not being able to use it consistently as they consumed substances both intravenously and through inhalation. Consequently, these participants described having to smoke drugs in unsafe areas of the hospital or having to leave hospital property to do so, and wished that they had a safe area to smoke substances while hospitalized. For example, "Kristin" had not used the SCS because she only smoked drugs, and "Rachel" discussed not being able to use the SCS consistently.

> I smoke crack . . . Where is a safe spot for me? Just 'cause I'm not sticking a needle in my arm I can't do my drug? Well thank you. I thought drugs were drugs. – "Kristin"

> I only inject methamphetamine. So, I only use that there and then usually on the way to the injection site, I'm smoking dope in the bathroom. – "Rachel"

3.3.2.3 "They are going to look down on me again": Worries about changes to patient care

Another challenge to SCS uptake reported by participants was privacy and documentation of service use. At the time of these interviews, SCS procedures required staff to communicate back to the ward via fax to acknowledge when a patient attended the SCS. Many felt that this procedure could compromise their privacy and disclose their substance use to members of their care team outside of the AMCT (whom they did not wish to discuss it with). This was a deterrent for who had not used the SCS and an ongoing concern for some who had. "Eve" discussed her thoughts on SCS documentation:

> Most people are afraid to go to the safe consumption site because they don't want it to come back to their unit, right. I find that those people who don't want to use the site because they don't want people to find out they're using, are the ones using the washrooms and stuff. – "Eve"

These participants did not want all unit staff to know that they used illegal drugs as they felt that this could lead to negative changes to their patient care. Most commonly, participants feared stigmatizing interactions with staff. "Kristin" and "Theo" described avoiding the SCS for this reason.

> That's one reason why I won't go there . . . I'm really kind of afraid that they are going to look down on me again because of my use. – "Kristin"

> I'd worry they'd be probing me for a long time . . . Things like do you have any pills . . . can we see your room . . . is there anything in here that's not supposed to be in here? – "Theo"

Of the participants who had *not* used the SCS, some were worried that they might receive less frequent care, that staff would be more hands off, or that they could be moved to a different patient unit if they were to use the SCS. Others expressed concerns that they could experience abrupt changes to doses or administration methods of prescribed medications for pain or withdrawal. These participants often recounted prior experiences (unrelated to SCS use) in which

they felt that hospital staff had suspected them of diverting prescribed medications, which they perceived resulted in changes to their medication regimes or increased scrutiny during dosing. For example, "Rhianna" feared experiencing reductions to her prescribed pain medications if she were to use the SCS.

> Well, we don't want to get caught cheeking it and get cut off your meds that you're getting, right? A lot of people I know survive off of it. – "Rhianna"

For similar reasons, a few participants who *had* used the SCS explained not going to the SCS as frequently as they would like to. For example, "Rachel" feared that she could be treated poorly as a result of accessing the SCS too often.

> Like I said, they have to tell the doctor, your team, whoever your doctor is, that you use- if you use it too many times. I know. I'm not dumb. I know how the hospital works, I know I'm going to get treated worse. – "Rachel"

3.4 Discussion

To our knowledge, this is the first study of its kind to examine the perspectives of hospitalized PWUD on an SCS operating in acute care. We specifically report patient perspectives on factors that shaped decisions to access or not access the SCS. Although not empirically generalizable, our findings offer unique contributions to the literature on improving patient-centered care for PWUD and may help inform SCS provision in other acute care facilities.

In line with prior work on the potential benefits of SCS in acute care (20,80–82,153), participants reported attending the SCS in an effort to minimize risk of drug-related harms in hospital. This finding is important, considering that in acute care facilities that do not provide SCS, PWUD frequently report consuming drugs alone, in unsafe locations of the hospital, and with unsterile harm reduction supplies (20,21,80,83). Other similar research has also described SCS use as a method to avoiding surveillance and everyday violence in community settings

(232,233), as well as in other non-acute healthcare facilities (154,234). Together, our findings indicate that the provision of SCS in acute care facilities may provide a unique opportunity for patients to more safely consume drugs in a high risk environment (20,21).

Despite a need for safety while using drugs in hospital, SCS provision did not result in uptake amongst all participants, and some described delayed uptake. Fears of encounters with security or police at the SCS echo prior work examining the perspectives of PWUD on prospective hospital SCS provision (80,157), and a larger body of research on harm reduction service access. For example, fear of potential conflict with authorities is also known to deter needle exchange program uptake in non-acute care settings (1,63,64), calls to 911 in the event of an overdose (65–68), and use of community-based SCS (68,158). We suggest that future research should examine the perspectives of authorities on acute care SCS specifically, as there is little, if any research on this topic. Examining the perspectives of security personnel and other authorities could help identify avenues for engagement, training, and education on reconciling acute care harm reduction with ongoing drug prohibition. Broader structural policy changes, such as drug decriminalization (219), the provision of injectable opioid agonist treatment (235), and safer supply interventions (236) could further encourage harm reduction and healthcare service uptake in acute care settings.

Our findings also highlight the impacts of drug stigma on healthcare access for PWUD (1,23,24,88,163,237), especially mistrust in healthcare providers (20,24,163). While others have hypothesized that the provision of SCS in acute care could promote patient-provider rapport (80,82,154), further steps may be necessary in order to foster harm reduction practices and attitudes amongst staff that align with SCS provision. Formal organizational policies on caring for SCS eligible patients may be useful, especially if such policies address individual and

collective determinants of behavior change amongst care providers (238,239). For example, staff adherence to clinical standards in other healthcare settings (e.g., for opioid prescribing, mental health care practices, reporting adverse drug events, and supporting smoking cessation) are known to be influenced by feelings of competence, perceived social/professional role, personal beliefs, and environmental resources (e.g., provider workload) (240–243). Such interventions or policies may be particularly effective if developed in collaboration with staff *and* patients (126,127,165).

Our results may also help inform larger debates on whether SCS in acute care should be operated by local health authorities or by external third parties (153). In some settings, it is possible that acute care SCS may be perceived by patients as more accessible if they are operated by an external organization that is able to provide services discretely, maintain anonymity, and with whom patients may already have strong rapport. Staffing acute care SCS with peer support workers as opposed to clinicians, or a blend of both, may also enhance uptake. At some community-based SCS in Canada, inclusive hiring practices have been found to encourage service use and promote feelings of comfortability in accessing these services amongst PWUD (244,245). Expanding peer involvement outside of the SCS, such as onto hospital wards and via AMCTs may also be a promising approach to fostering trust in SCS amongst patients (156,246).

Other acute facilities seeking to implement SCS should further be cognizant of the needs of visitors, hospital outpatients, and the wider community (153). A pertinent goal of SCS in any setting is to provide a clean and safe space for illegal drug consumption, ultimately to help reduce risks of drug-related harms (143,144,146). Restricting access to this intervention to registered patients could have unintended consequences. Likewise, the safer inhalation needs of hospital patients should be addressed. During the study period there were only two federally-

sanctioned supervised inhalation services in Canada, neither of which were located in acute hospitals (247,248). Some research suggests that as many as 60% of PWUD would access a supervised inhalation room on hospital grounds (80), however this integration may prove to be difficult. The complex infrastructures of hospitals may pose challenges for ventilation costs and occupational health and safety, and tobacco regulations that prohibit smoking inside of and in close proximity to hospitals may be a barrier (81). On this basis, acute care facilities should explore the provision of outdoor supervised inhalation tents (249,250) that align with the needs of patients and hospital regulations until these challenges can be overcome.

Overall, our findings indicate that PWUD may access SCS in acute care facilities to address essential safety needs while using drugs in hospital. A desire to ensure safety may outweigh fears of potentially negative outcomes associated with SCS use for many patients. However, introducing a decriminalized space into an otherwise heavily surveilled setting will not lead to service uptake amongst all eligible patients. Making the decision to access a hospital-based SCS may involve a careful examination of possible risks and benefits, which should not be necessary when seeking potentially life-saving healthcare. This calculus underscores the abiding impacts of drug prohibition on the hospital environment, and demonstrates that participants' prior negative experiences with authorities and care providers remain significant barriers to harm reduction services in hospital. Together, our findings suggest that it may be difficult to ensure SCS uptake amongst all patients without broader structural reforms to illegal drug policy in Canada.

3.4.1 Strengths and Limitations

This study offers novel contributions to the substance use literature, as it is amongst the first of its kind to examine patient perspectives on a hospital-based SCS. Our findings on patient-

reported reasons for accessing or not accessing the SCS are of particular significance. Despite a large body of public health evidence calling for the implementation of SCS in hospitals (21,80–82,154), little is known regarding whether and why patients may actually use this service in a hospital setting. Our findings especially highlight that SCS provision may not necessarily translate into universal patient uptake if underlying issues of stigmatization and drug criminalization pervade in the acute care context (20,23,24,88). These unique insights may help facilitate service planning, delivery, and quality improvements for advancing the integration of hospital-based SCS.

However, there are several limitations to our findings. First, for ethical reasons we relied on AMCT staff to refer potential participants to our research team rather than approach them directly, which could have biased our sample towards those with more favourable views of the service. Further, despite our best efforts to protect participant confidentiality, some participants may not have felt comfortable in sharing some of their negative opinions on accessing the SCS (251). Staff perspectives were also not included in this study. However, qualitative interviews with staff are being conducted as part of the broader hospital SCS evaluation. Finally, in data collection and analysis we did not attend specifically to potentially unique barriers amongst Indigenous participants (e.g., First Nations, Métis, Inuit). In Canada, Indigenous peoples experience disproportionate rates of harms associated with substance use (30), and face unique structural and racial barriers to acute care services (252). Further research is warranted to understand the perspectives of this patient population on accessing acute care SCS.

3.4.2 Conclusions

Our findings suggest that hospitalized PWUD may be inclined to access SCS in acute care facilities primarily to help ensure safety while using drugs in an otherwise potentially unsafe

hospital environment. However, access for some eligible patients may be restricted by the effects of drug prohibition on the hospital environment, indicating that uptake may be difficult to ensure amongst all patients unless illegal drugs are decriminalized more broadly. Future research should examine the perspectives of hospital staff, security, and local police on hospital SCS to identify avenues for training, education, and policy development in the face of drug prohibition. Participants also cited a number of limitations to service offerings. We suggest that other acute care facilities seeking to implement SCS should consider the needs of the local patient population, as well as other groups that may require SCS access. Overall, we hope that this research will contribute to improving patient-centered care for PWUD and help guide the provision of SCS in other similar acute care facilities.

Chapter 4: Conclusions

The overarching purpose of this thesis was to generate new knowledge on improving acute care for PWUD. Specifically, this thesis attempted to identify strategies for refining hospital service delivery to better meet the needs of this patient group and promote population health. To accomplish this, two distinct studies were conducted - one quantitative and one qualitative – with the respective aims of 1) assessing the self-reported unmet service needs of acute care-seeking PWUD to help tailor hospital service delivery and better address extant service needs, and 2) examining patient perspectives on an acute care SCS to guide quality improvement, and ultimately facilitate service uptake. A patient-oriented approach underpinned both studies, in which patients were consulted to provide first-hand knowledge regarding their service needs (165). The remainder of this concluding chapter summarizes the main findings, strengths, and limitations of each study, synthesizes the potential policy and practice implications of this thesis, and proposes directions for future research.

4.1 Main Findings

The purpose of Study 1 was to assess the perceived unmet substance use and mental health service needs of acute care-seeking PWUD. I found that most survey participants reported an unmet care need for substance use and mental health concerns in at least one service category (84.9%), and many met criteria for high levels of unmet service needs (46%). Unmet needs for counselling (56%) and social interventions (50%) were most prevalent. Similarly, prevalence of unmet need in at least one service category are as high as 82% amongst PWUD in community settings (4–10,136). In this body of literature, unmet needs for counselling and social interventions are also particularly common (4,114), and structural barriers to services have been more commonly reported than motivational barriers (4). Findings from Study 1 also contribute to

the literature on a theoretical basis, as I applied and tested the Behavioral Model for Vulnerable Populations to a new subpopulation of PWUD (164). As predicted, a regression model including variables from all three domains of the framework (predisposing, enabling, and need factors) best explained perceived unmet service needs and accounted for approximately 25% of all variance. A substantial amount of variance was left unexplained, which could potentially be associated with a number of other individual predictor variables as well as community-level health service factors that were not included in the model. For example, participants' access to local social supports (e.g., density and appropriateness) and basic needs for food, shelter, and safety may compete with service needs (164).

The purpose of Study 2 was to understand the perspectives of hospitalized PWUD on the provision of an acute care SCS designed for registered patients. In line with prior work on prospective SCS provision (20,80–82,153), participants were motivated to attend the SCS out of a desire to minimize drug-related harms and to avoid using drugs in areas of the facility where drug law enforcement was prevalent. However, fears of encounters with drug law enforcement at the SCS still deterred some participants from using the service, which echoes other work examining potential hospital SCS provision (80,157), and reflects broader impacts of drug prohibition on the hospital environment (20,23,24,88). Participants also worried about potential changes to their patient care following SCS use, which highlights the implications of drug stigma on healthcare access for PWUD (1,23,24,88,163,237). SCS uptake was further limited by service eligibility requirements (e.g., patient only) and a lack of supervised inhalation available. Together, these findings indicate that although safety is a major driving factor of SCS use amongst eligible patients, service uptake may be limited without a hospital-wide harm reduction approach to substance use and broader policy reforms that decriminalize illegal drug use.

4.2 Strengths and Limitations

This thesis complements a number of other studies that have sought to improve hospital care for PWUD. By examining the baseline perceived unmet service needs of acute care-seeking PWUD, findings from Study 1 expand on prior work that has primarily focused on the perceived unmet needs of PWUD for outpatient substance use and mental health services (4–10,136). Findings from Study 1 especially build on a small number of descriptive quantitative studies that have reported the service needs of PWUD at ED presentation (139,140), as well as a larger number of qualitative studies that have characterized the unmet service needs of PWUD during hospital admissions (1,19,20,24,77). The perceived unmet service needs of the subpopulation of PWUD who seek acute care had been poorly documented prior to this study, and to my knowledge, had not been systematically assessed using a standardized instrument like the PNCQ.

Findings from Study 2 complement prior research discussing the potential integration of SCS into hospitals. Most notably, work led by Sharma (81), Rachlis (82), McNeil (20,154), and Cortina (80). My study builds on this body of research by providing rich detail on the *actual* experiences of patients who were offered access to an acute care SCS. Until this study, most (if not all) research on acute care SCS was based on prospective SCS provision. Study 2 especially makes novel contributions to the literature by capturing some of the first feedback from hospital patients regarding the actual accessibility of this service, which can be used to help guide the provision of SCS in other similar acute care settings and to help improve acute care service delivery for PWUD more broadly.

However, there are several limitations to each study. In Study 1 a *post hoc* analysis was conducted (222), and the original study employed non-probability sampling methods which may limit the generalizability of the findings. The sample may also be limited in that it only included

PWUD that were seeking help at acute care hospitals; there was no complementary data from a subgroup of PWUD who were not seeking care. However, it is possible that the subpopulation of PWUD who present to acute care have differing service experiences and needs compared to the overall population of PWUD. For example, acute care-seeking PWUD could be better connected to, or have more positive experiences with harm reduction services compared to those who do not seek help at hospitals.

It was also only possible to discern associations between the predictors and high level of unmet need, given the cross-sectional design of the study (224), and although all assumptions passed statistical testing, the analysis grouped interrelated variables (164). Attending to discrete factors only can risk overlooking critical intersections between variables (225), and therefore readers should focus on the overall findings as opposed to individual variables. Finally, the survey data analyzed in Study 1 was self-reported and is thereby subject to recall bias. However, the reliability and validity of using self-report measures with PWUD has generally been verified (223), and structurally vulnerable populations hold unique knowledge and expertise that should be prioritized over the use of administrative datasets or the opinions of health professionals (126). Examining self-reported data is further consistent with ethical research standards involving marginalized populations and aligns with patient-oriented methods (126).

In Study 2, our recruitment strategy relied on AMCT staff to refer potential participants to our research team, which could have biased our sample towards those with more favourable views of the service. However, this approach was far more ethical as opposed to our research team approaching potential participants directly (e.g., to maintain patient confidentiality). In addition, despite best efforts to protect participant confidentiality, some participants may not have felt comfortable in sharing some of their negative opinions on the SCS (251). Staff

perspectives were also not included in this study, however, qualitative interviews with staff are being conducted. Future Canadian research should attend to potentially unique barriers amongst Indigenous patients who are eligible to use hospital-based SCS, who may face additional challenges due to racism (252). Finally, being that participants had mixed opinions on whether non-patients should be allowed to use hospital SCS, examining patient *and* visitor perspectives on the potential impacts of such policy change could better help inform quality improvements.

Despite the limitations outlined above, this thesis contributes to the literature by examining some of the most critical service needs amongst acute care-seeking PWUD. These findings especially provide guidance for hospital service improvements in the province of Alberta, and have potential to be applied to other acute care facilities across Canada.

4.3 Policy and Practice Implications

Study 1 findings suggest that the perceived unmet service needs of PWUD who seek help at acute care hospitals may be similar to those surveyed in community and population health studies, which could reflect structural barriers to primary care (11–13) and subsequently high rates of acute care seeking (13–15). Indeed, predominant reasons for having unmet service needs amongst participants in this study were mainly structural (e.g., asking for help but not receiving any/enough). Findings from Study 2 indicate that there is a dire need amongst hospitalized PWUD to ensure their safety while using illegal drugs on site, and that accessing acute care SCS may be one strategy for doing so. However, for some participants, SCS uptake was restricted by collateral effects of drug prohibition on the hospital environment (e.g., drug surveillance, stigma).

Taken together, the findings of this thesis highlight the impacts of systemic barriers on access to substance use and mental health services for PWUD in acute care. Findings from Study

2 underscored the impacts of fear and trust on patient decisions to engage or not engage with the SCS, which could have implications for understanding findings on unmet service needs in Study 1. Although it was not possible to integrate measures on fear and trust into the regression model, it is very possible that how our sample perceived need for care was shaped by past negative care experiences as a result of drug stigma and criminalization (1,23,24,88,163,237). For example, negative care experiences may have resulted in some people concluding they did not get enough care, or did not need that kind of care. In the future it may be useful to integrate consideration of these factors into the predisposing domain, which can contain internal stigma and attitudes (253).

Hospital policy makers and service planners should also seek to develop strategies that can address more than patients' acute medical problems only, considering such high prevalence of unmet social needs in Study 1 and influences on SCS access in Study 1 unrelated to harm reduction. Expanding social programming in acute care facilities (e.g., income assistance, housing services, mental health supports, legal aid) is one solution. Tailoring SCS operations or hospital harm reduction services more broadly to address the needs of acute care-seeking PWUD may be effective, such as by formally providing counselling and social services directly in hospital SCS. Wider provision of multidisciplinary AMCTs could also be useful. Extant literature demonstrates that AMCTs can help connect hospitalized PWUD with primary care, housing supports, government ID registries, income assistance programs, and substance use treatment for example (156,217).

Acute care policies that promote site-wide cultural changes are also likely required, such as through the development of co-designed harm reduction guidance documents (126,127,165). Patient engagement in development processes could lead to particularly relevant strategies, that could ultimately help address the overall, persistent unmet needs of PWUD (126,127). Policies

designed to shift hospital culture may also be most effective if they can align with behavioral motivators amongst hospital staff (238,239). As such, collaboration amongst patients, staff, and policy makers should be considered in the shaping of these efforts.

Above all, however, the findings of this thesis suggest that broader drug policy reforms are necessary. It is possible that acute care for PWUD may never be patient-centered unless illegal drugs are at minimum decriminalized at the provincial and/or federal levels. Until then, hospitals must develop policies that can help mitigate the implications of drug criminalization and stigma on service access for this population. On this basis, hospital and SCS policies that encourage inclusive hiring and promotions of people with lived experience may help advance care, especially to facilitate trust in SCS provision specifically and health systems more generally (244,245). Presentations to hospital provide valuable opportunities for helping address the unmet needs of this population (16,17), and identifying avenues for advancing patient-centered care remains vital (1,18,19).

4.4 Considerations for Future Research

The findings of this thesis may help guide future research on improving acute care for PWUD, and a number of potential areas for future study were identified within each paper. When this thesis is considered in its entirety, a number of other research gaps warrant future investigation. First, given that this thesis primarily focused on acute care service presentation and in-hospital service uptake, future studies should seek to evaluate the impacts of interventions designed to support the needs of hospitalized PWUD. For example, the impacts of hospital SCS on addressing the unmet service needs of patients warrants attention. A large body of public health evidence has hypothesized that SCS may help improve acute care for PWUD (20,80–82,153), but to date, no research has evaluated the actual health impacts of this service. As

discussed, consumer-defined or patient-oriented research is critical for guiding improvements to any health service (125), and given the challenging nature of hospitalizations for structurally vulnerable PWUD (24,88,103), as well as the barriers to SCS uptake reported by patients herein, a mixed-methods evaluation examining self-report survey data, qualitative interview data, and hospital administrative data could be particularly useful.

In addition, although this thesis presents an in-depth exploration on the service needs of PWUD in acute care, patient perspectives in this thesis were limited to those who were structurally vulnerable, especially those with low income and/or unstable housing. Future research should seek to examine the acute care needs of PWUD of higher socioeconomic status, as it is very possible that these patients also face drug-related stigma and discrimination when seeking health care. Finally, recommendations for improving service delivery outside of the hospital were not considered. Given the high rates of acute care utilization amongst PWUD (13–15), yet poor patient and hospital outcomes (e.g., high rates of leaving against medical advice) (79,98,99), improving hospital service delivery for this population is critical. However, identifying areas for improvement in primary care settings may be less costly and could potentially shift service utilization (254). Enhancing coordination between the acute care setting and the primary care setting could also lead to better health outcomes and lower overall system costs (254,255). Future work should therefore seek to expand the scope of this thesis and investigate the service needs of PWUD between hospital and primary care and further develop recommendations for quality improvements for transitions between these settings.

4.5 Conclusions

Overall, the findings from this thesis yield novel insights on the self-reported acute care service needs of PWUD. Specifically, this thesis produced research that was the first of its kind

to examine the perceived unmet service needs of acute care-seeking PWUD, and patient perspectives on an SCS operating in acute care. Together, the findings and recommendations reported here have the potential to advance hospital service policy for PWUD and ultimately support overall population health.

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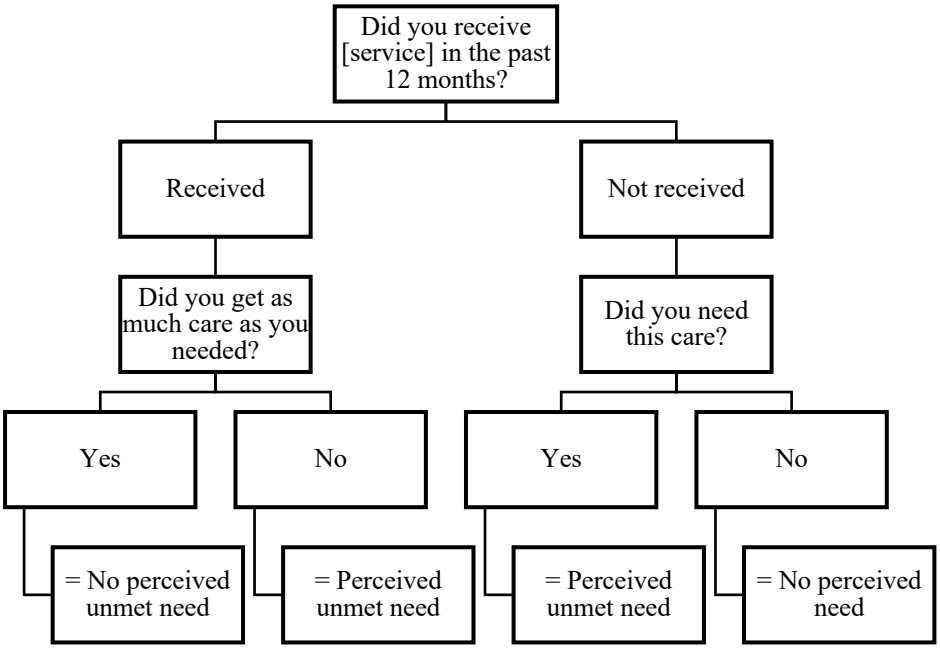
Appendices

Appendix A: Flow Chart of Perceived Need for Care Questionnaire Coding Categorization



Appendix B: Barriers to Care Using the Perceived Need for Care Questionnaire, Adapted for an Inner-City Population of People Who Use Illegal Drugs

Motivational barriers	
	I preferred to manage myself
	I didn't think anything would help/nothing can help me
	I don't want to get help at this time
	I was afraid to ask for help or what others would think of me
	Other motivational (based on text)
Structural barriers	
	Wait list was too long/no spaces are available
	I was only allowed a limited amount of help
	I couldn't afford the money
	I asked but I didn't get help
	I didn't know where to get help
	Other structural (based on text)

Appendix C: The Behavioral Model for Vulnerable Populations and an Adapted Model for Acute Care-Seeking People Who Use Illegal Drugs

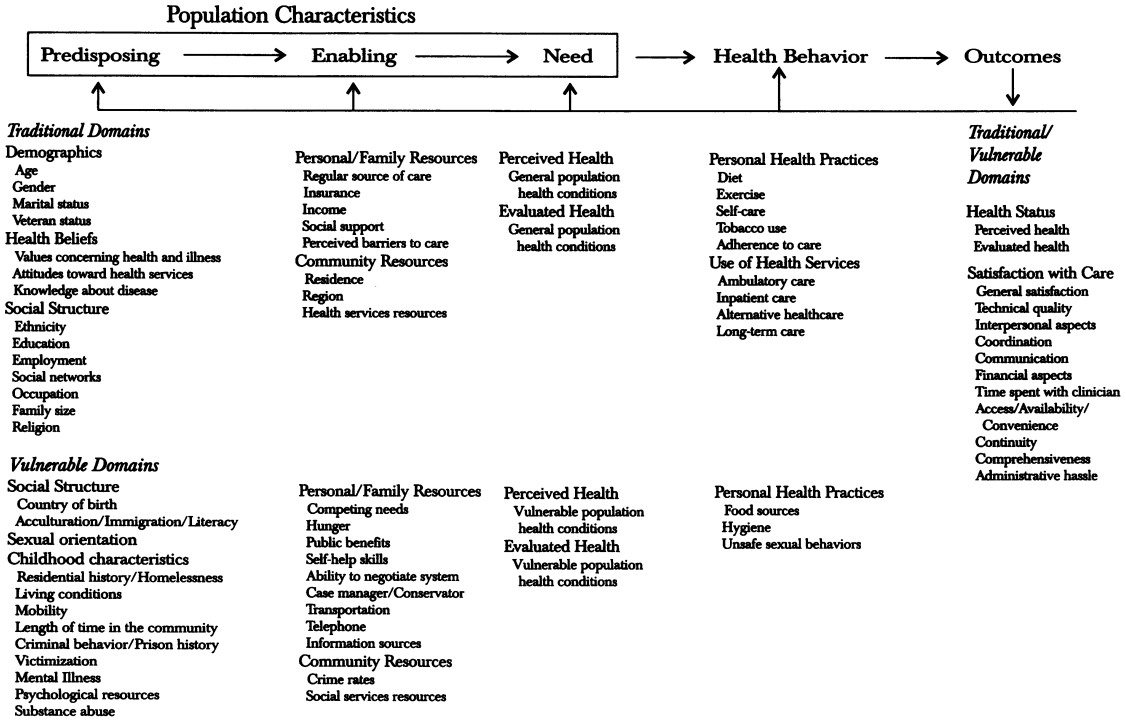


Figure A1. The Behavioral Model for Vulnerable Populations. Reprinted from "The Behavioral Model for Vulnerable Populations: Application to Medical Care Use and Outcomes for Homeless People" by Gelberg, L., Andersen, R.M., and Leake, B.D., 2000, *Health Services Research, 34,* p. 1278.

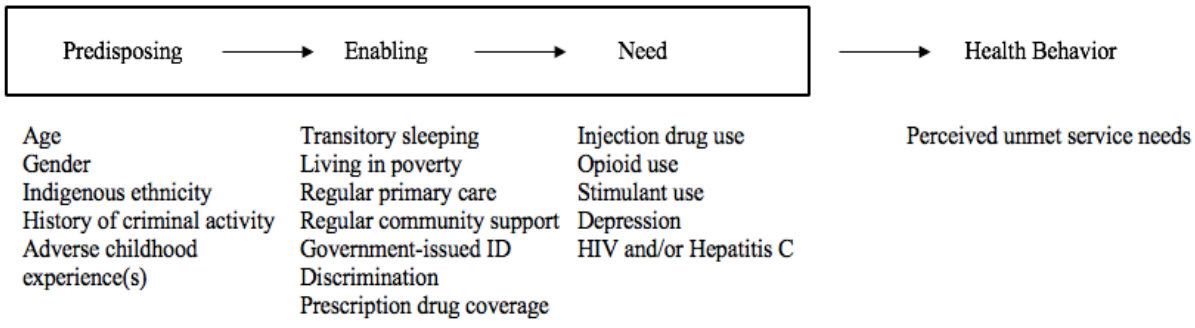


Figure A2. The Behavioral Model for Vulnerable Populations Adapted for Acute Care-Seeking People Who Use Illegal Drugs (PWUD). Adapted from "The Behavioral Model for Vulnerable Populations: Application to Medical Care Use and Outcomes for Homeless People" by Gelberg, L., Andersen, R.M., and Leake, B.D., 2000, *Health Services Research, 34,* p. 1278.

Appendix D: Abridged Version of the Original ARCH Patient Outcome Evaluation Baseline Survey, Limited to Variables Tested in Chapter 2

ARCH TEAM: PATIENT OUTCOME EVALUATION SURVEY
Version 3

Study Participant ID:

ARCH Chart Number:

Interview date: __ __/__ __/__ __ __ __
DD MM YEAR

Patient recruited from (unit or department): _____

Interviewer initials: _____

Interview start time: _____ AM or PM (*please circle*)

Is the information collected in the interview significantly distorted by the participant's misrepresentation?

☐ No
☐ Yes
☐ Not sure

Is the information collected in the interview significantly distorted by the participant's inability to understand?

☐ No
☐ Yes
☐ Not sure

Thank you for contributing to this study. As you go through the survey, please keep in mind that there are no wrong answers. It's very important that you answer as honestly as you can. We realize some of these questions are sensitive. If you do not want to answer a question, you do not have to. It is better for you to refuse to answer a question than to give a false answer. We take your privacy very seriously. All the information that you provide will only be kept between you and me. We never report any individual information.

If there are any questions you don't understand, please stop me and ask for clarification. The interview takes about an hour. If you need a break, let me know and we can stop for a short rest before we finish the interview.

1. What is your age? _____ years

2. What is your gender?
   Male
   Female
   Transgendered

3. What ethnic group do you identify with?
   White
   First Nations
   Métis
   Other
   If you identify with another ethnic group please specify:
   _____

4. In the last 6 months have you been involved in any of the following activities?

Activity	**# of occurrences**
Break and enter	_____
Theft under $5000	_____
Breached probation	_____
Failed to appear	_____
Possession of stolen property	_____
Possession of drugs for the purpose of trafficking/dealing	_____
Robbery	_____
Shoplifting	_____
Assault	_____
Mischief/disorderly conduct	_____
Other (please specify): _____	_____

5. Next, we would like to learn more about things that might have happened while you were growing up. This is so we can understand our patients and make sure we have the right kind of program to help. You don't have to answer any or all of these questions. Let us know if you would like to skip this section.

   a. As a child, did you ever witness abuse in your household (physical, sexual, emotional)?
      Yes
      No

   b. As a child, did you ever experience abuse (physical, sexual, emotional)?
      Yes
      No

   c. Did you ever spend time in foster care?
      Yes
      No

d. Did you ever spend time in a residential school?

Yes
No

6. In the past 6 months what types of places have you slept in? (Check all that apply)

Own apartment / house
Hotel / furnished room / boarding house
Transition housing
Hostel / shelter
Friend's place
Family member's place
Camp (squatting)
Working out of town (rigs / work camp)
Reserve or settlement
Couch surfing
Detox
Jail / prison
Hospital
Street (sleeping rough)
Don't sleep (walk all night)

7. How much cash/money did you make in the past 30 days? (Includes legal and non-legal sources of income as well as assistance cheques)

$0-$100
$100-$500
$500-1000
$1000-2000
$2000-3000
$3000 +
Prefer not to answer
Don't Know

8. Do you have a family doctor or nurse practitioner you see regularly?

Yes
No

9. Do you have a support worker in the community you work with regularly (outreach worker, social worker, housing worker, etc.)?

Yes
No

10. Right now, do you have any government-issued ID? (SIN, birth certificate, DL, AHC)

No

Yes
Don’t know
No response

11. Have you ever experienced discrimination, been prevented from doing something, or been hassled or made to feel inferior in any of the following situations because of your race, ethnicity, or colour?

a. At school?
Never
Once
2-3 times
4 or more times

b. Getting hired or getting a job?
Never
Once
2-3 times
4 or more times

c. At work?
Never
Once
2-3 times
4 or more times

d. Getting housing?
Never
Once
2-3 times
4 or more times

e. Getting medical care?
Never
Once
2-3 times
4 or more times

f. Getting service in a store or restaurant?
Never
Once
2-3 times
4 or more times

g. Getting financial advice or help?

Never
Once
2-3 times
4 or more times

h. On the street or in a public setting?
Never
Once
2-3 times
4 or more times

i. From the police or in the courts?
Never
Once
2-3 times
4 or more times

12. Right now, do you have prescription drug coverage? (e.g., you pay for only part or none of the cost of your prescriptions)
Yes
No
Don't know

13. Have you used any NON-injection drugs in the past 6 months?
Yes
No
Don't know
No response

a. If yes, in the last 6 months when you were using, which of the following NON-injection drugs did you use?
Heroin (snorted or smoked)
Morphine (pinks, greys, Kadians)
Hydromorphone (Dilaudid, dilly's, hydros)
Codeine (Tylenol 3)
Oxycodone (Percocet, percs)
Oxycontin (old oxys)
OxyNeo (new oxys)
Street Methadone (swallow)
Street Suboxone (oral)
Fentanyl (swallow or smoke)
Propoxyphene (Darvon)
Meperidine (Demerol)
Benzodiazepines (Valium, benzos, Ativan, Restoril, Temazepam)
Wellbutrin

Cocaine powder (sniffed or snorted)
Crack cocaine (smoked)
Methamphetamines (speed, crystal meth, pint)
Talwin (t's)
Ritalin (r's)
Inhalants (nitrous oxide)
Marijuana (pot, weed)
GHB
Ketamine (Special K)
MDMA (Molly)
Mushrooms
LSD
Non-beverage alcohol (mouthwash, hand sanitizer, cologne, hairspray, cooking wine)
Other:_____
Don't know
No response

15. Have you use used any injection drugs in the past 6 months?
    Yes
    No
    Don't know
    No response

    a. If yes, in the last 6 months when you were injecting, which injection drugs did you use?
        Heroin
        Speedballs (heroin/down and cocaine)
        Goofballs (heroin/down and crystal meth)
        Morphine (pinks, greys, Kadians)
        Hydromorphone (Dilaudid, dilly's, hydros)
        Codeine (Tylenol 3)
        Oxycodone (Percocet, percs)
        Oxycontin (old oxys)
        OxyNeo (new oxys)
        Street Methadone
        Street Suboxone
        Fentanyl
        Propoxyphene (Darvon)
        Meperidine (Demerol)
        Benzodiazepines (Valium, benzos, Ativan, Restoril, Temazepam) Wellbutrin
        Cocaine powder
        Crack cocaine
        Methamphetamines (speed, crystal meth, pint)
        Other:_____
        Don't know

No response

17. Over the past two weeks, how often have you been bothered by any of the following problems?

a. Little interest or pleasure in doing things.

Not at all
Several days
More than half the days
Nearly every day

b. Feeling down, depressed, or hopeless.

Not at all
Several days
More than half the days
Nearly every day

18. Have you ever been tested for HIV?

Yes
No
Don't know
No response

a. If yes, what was the result of your most recent HIV test?

Positive for HIV—you have the virus
Negative for HIV—you do not have the virus
Indeterminate result
You didn't understand the result
You are still waiting for the result
Your result is ready but you did not receive it yet
Don't know
No response

19. Have you ever been tested for Hepatitis C?

Yes
No
Don't know
No response

a. If yes, what was the result of your most recent Hepatitic C test?

Positive for HIV—you have the virus
If positive, when were you first told you have Hepatitis C? _____ years ago.
Negative for HIV—you do not have the virus
Indeterminate result
You didn't understand the result
You are still waiting for the result
Your result is ready but you did not receive it yet

Don’t know
No response

Appendix E: List of Questions and Probes Used to Elicit Patient Perspectives on the Acute Care Supervised Consumption Service

Hi, my name is [name] and I'm a researcher with the Inner City Health and Wellness Program here at the hospital. I'm talking to patients who use drugs to try to understand and help improve their experience at the Alex. As you may know, the Alex has a supervised consumption, or SCS, site. The SCS provides harm reduction supplies and is a clean, safe space where patients can consume substances while they are in hospital. I'd like to understand a bit more about patient experiences with this program. That's pretty much what the interview will be about. I will ask you questions and you can answer however you like. Everything you say to me is confidential and if you want to skip a question, just let me know. You may also stop the interview at any time. **[COMPLETE INFORMED CONSENT PROCESS]**. Is it okay if I turn on the recorder now? **[TURN ON AUDIO RECORDER]**

SECTION I: Patient experiences at the Royal Alexandra Hospital

Getting to know the participant	
Questions:	**Possible probes:**
Why are you currently here, in the hospital? What do you think about the care you have received so far here at the Alex?	- Can you tell me a little bit about what was going on in your life leading up to your hospital admission? - Specific examples/incidents (positive and negative) - Pain/withdrawal management - Wait times - Interactions with staff
Broaching the topic of the supervised consumption site (SCS) *If mentioned earlier, confirm that the participant actually used the site. If the participant still hasn't confirmed that they used the site, suggested questions and progression are listed below.*	
Questions:	**Possible probes:**
Have you heard about the Royal Alex's SCS?	

What do you think about the hospital having a SCS? Have you used the SCS? Again, I'm not going to tell any doctor or nurse what you say.	
If participant used the SCS, please go to SECTION II. If they have not used the SCS, please go to SECTION III.	

SECTION II: Experiences accessing the SCS supervised consumption site

Questions:	**Possible probes:**
How did you find out about the SCS?	- Who did you find out about it from? - What did they tell you?
What did you think when you were first told about the SCS?	- How were you feeling at the time? (probes: withdrawal, pain, or stress)
Before going to the SCS did you talk to a nurse, doctor or other hospital worker about it? Do you remember who that was?	- Did you feel comfortable or uncomfortable talking about the SCS with [name of staff member]? -Were there other people in the room? How did you feel talking about the SCS in front of them?
Why did you decide to give the site a try?	
What did you think of the 'informed consent' process?	- Do you remember signing something before you could use the SCS? - What did you think about the rules?
What did you think of the site?	- How did it go? - Was the site accessible? - What do you think of the location? - Did you have any issues getting there?
The first time you visited the site what was it like?	- How long were you there for? - How did you feel when you first saw it? - What happened while you were there? - What happened after you left?
	- Were you worried about getting in trouble at all?

Did you feel comfortable or uncomfortable using the SCS?	- How did the staff treat you? - Did you inject or did you use in other ways? - Can you tell me what drugs you took while you were there?
Where do you think people going to the SCS get their drugs from?	- Can you tell me where you got the drugs from? Again, this interview is confidential. I am not a doctor or a nurse and I will keep anything you say just between us. - Probes: family and friends, dealer, from other patients, save the ones they are dispensed, etc. - If we offered a safe supply of drugs, would you use them?
We've noticed that most patients using the site are using opioids (instead of meth or other drugs), why do you think that is?	- Do you feel that people using drugs other than opioids are less likely to use the site or more likely use elsewhere in the hospital? - Why or why not? - Do you think that people who smoke drugs are more or less likely to use the site? - Why? - Why or why not?
Do you have a PICC or IV line in right now? Did you inject in it while you were at the SCS? How often have you been using the site?	
While you've been here, have there been times where you didn't use the SCS to use drugs?	- Where did you use instead? - Where did you get your supplies? - Why you didn't go to the site? (e.g., want to use with a friend, need help injecting)
Have you been to a community SCS site?	- What do you think of those sites? - How are they the same and how are they different from the hospital site? - Is there anything you prefer at this site? - Is there anything you prefer at the community sites? - Which do you prefer using? Why?

How has the SCS impacted your stay in the hospital?	- Did it make you more or less likely to stay? - Has it helped you feel better or made you feel worse? - What about in comparison to when we didn't have the site? - Is it easier or harder to talk to hospital staff about drugs now that the site is there?
How did the staff on the wards treat you after you returned from using the site?	- Did anything change when you got back to the unit? (e.g., medications, staff treatment, etc.) - Have you had any interactions with security guards? What was that like? How did it compare to previous interactions with security guards?
How can we make the SCS better for people who use drugs? How can we make the hospital experience better for people who use drugs?	- What would you do if you were in charge? - How is the hospital experience now different from hospital experiences before the SCS opened? - Other improvements? [staff, space, facility, etc. related] - Other ideas for helping people stay safe and comfortable?
The hospital is worried about people using drugs in the washrooms, overdosing and not being found. How do you think we can make the hospital safer for people who use drugs?	
Is there anything else you would like to tell me?	
Please go to SECTION IV.	

SECTION III: Reasons for not accessing the SCS

Questions:	**Possible probes:**
So what did you think when you were first told about the site?	- How were you feeling at the time? (probes: withdrawal, pain, or stress) - Did you feel comfortable or uncomfortable talking about the SCS with [name of ARCH staff member who offered supplies/access to site]? - Were there other people in the room? How did you feel talking about the program in front of them?

Why do you think some patients who use drugs choose not to use the SCS?	- Did you feel comfortable or uncomfortable talking about the site? - Has your treatment from staff been mostly bad or good while you were hospitalized? In what ways? - If you decided not to use the SCS, why was that? Probes: - Worried about getting in trouble? - Worried about changes to meds? - Didn't like the rules/consent process (i.e. report back to unit, not being able to bring someone, not being allowed to split drugs, needing help with injecting, wanting to smoke drugs, etc.) - Practical reasons? (brought own supplies, nothing to inject, hard to access SCS, difficult to find, distance from wards, etc.) - Clinical reasons? (being too sick, having pain or withdrawal managed well, busy with medical care/tests, etc.) - Wanting to stop injection drug use? (motivators?)
If people don't use the SCS, where do they use instead?	- Where did they get their supplies? - Why do you think they didn't go to the site? (e.g., want to use with a friend, need help injecting)
The hospital is worried about people using drugs in the washrooms, overdosing and not being found. How do you think we can make the hospital safer for people who use drugs?	
Have you been to a community SCS site?	- What do you think of those sites? (If yes, ask questions about why patient used community site but not hospital site)
What do you think we can do to make the SCS better or easier to use?	- Specific examples - Probe for rationale behind suggestions
What are some other ways to make hospital care for people who use drugs better?	- What would you do if you were in charge? - Needle exchange improvements? - Other improvements? [staff, space, facility, etc. related] - Other ideas for reducing risks or harm? - If we offered a safe supply of drugs, would you use them?

Is there anything else you would like to tell me?	
Please go to SECTION IV.	

SECTION IV: Patient Demographics

Questions:	**Survey Answers:**
I'd like to ask you a few questions about yourself.	
What is your age?	
How do you identify?	Man Woman Other:
What is your ethnicity or race?	White Indigenous Asian South Asian Black Latin Arab Other:
To confirm again, what was the main reason that you came to the hospital?	
Roughly how long have you been using drugs?	If injecting, how long injecting?
What drugs do you use?	
What is your drug of choice?	
How do you use drugs?	Inject Smoke Oral Snort Other:
When was the last time you overdosed?	
How many times have you been hospitalized in the past 5 years?	
Have you ever left the hospital before completing your treatment?	