

Assessing Healthcare and Harm Reduction Needs Among Women and Men who Smoke Crack Cocaine

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ABSTRACT

This thesis was undertaken to assess the characteristics of individuals who smoke crack cocaine and to examine the health-related risks and healthcare needs of this population. A literature review of 147 published articles was conducted to synthesize evidence regarding behaviours associated with crack use and to assess the risks of disease transmission through crack smoking behaviours. Qualitative interviews were subsequently conducted with thirty Ottawa residents who smoke crack to learn about their experiences with healthcare and harm reduction services. Results identified barriers related to accessing primary healthcare and drug treatment programming among people who smoke crack and gaps within existing harm reduction services. Individuals who smoke crack represent a marginalized population who are often missed through traditional health promotion and harm reduction programming. There is a need for increased coverage of current programming and a reduction of factors which currently hinder the delivery and effectiveness of crack-specific harm reduction programs.

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LIST OF ACRONYMS

AIDS	Acquired Immune Deficiency Syndrome
ART	Antiretroviral Therapy
ASO	AIDS Service Organization
CHC	Community Health Centre
DTES	Downtown Eastside (of Vancouver)
HAART	Highly Active Antiretroviral Therapy
HCV	Hepatitis C Virus
HIV	Human Immunodeficiency Virus
IDU	Injection Drug Use
IHRA	International Harm Reduction Association
MMT	Methadone Maintenance Therapy
NSP	Needle and Syringe Program
OHREB	Ottawa Hospital Research Ethics Board
OST	Opioid Substitution Therapy
PHAC	Public Health Agency of Canada
SCF	Supervised Consumption Facilities
SIF	Supervised Injection Facilities
SSF	Supervised Smoking Facilities
STI	Sexually Transmitted Infection

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1.0 INTRODUCTION

1.1 Background on Crack Cocaine

According to people who use powder cocaine, street cocaine may be no more than 20% pure and may contain various additives, including powdered milk, sugar, drink mixes, fluorescent light bulb powder, chalk, toothache medication, corn starch, drywall dust and aspirin (1). When cocaine is mixed with these additives, it becomes difficult to completely dissolve and therefore near impossible, and dangerous, to inject. As a result, many cocaine users began using crack cocaine as a substitute drug (1).

Crack, which is simply a crystallized form of cocaine, is made by heating powdered cocaine within a solution of baking soda and water. Through this process, the cocaine is converted from powder form to a solid, often called “rock”. Crack gets its name from the crackling sound made both during its manufacturing process and when it is heated and smoked. Depending on the individual manufacturer, the process may also include adding other drugs, such as methamphetamines, which results in a smaller proportion of cocaine required, therefore increasing overall profits through the street-level selling of crack. Crack is rarely snorted and is most often smoked, although it can be boiled down to allow for injection (2).

Rock cocaine, or crack, is a cheaper form of cocaine and became widely available in the mid-1980s (3). The neurochemical effects of crack make it uniquely addictive and, with chronic use, it causes strong cocaine cravings and a desire for frequent consumption (4). Compared to snorting cocaine intranasally, smoking crack results in a more

efficient absorption through the lungs, which provide increased surface area compared to the nasal membranes (5). Through smoking, crack vapors have ready access to the bloodstream resulting in an immediate and consuming high (6). The coveted high is intense, but is extremely short, lasting approximately twenty minutes at the most (7). An addiction to crack cocaine has been suggested to progress more rapidly than addiction to opiates such as heroin or morphine, as well as alternate forms of cocaine (6). As a result of the intense cravings associated with its use, crack use often involves binges where crack smokers often inhale large amounts of the drug frequently during each binge (8).

Although it was once viewed as an “urban” drug and was available primarily in metropolitan areas, crack use is now widely reported throughout Canada, the United States, and Europe (9-11). Emerging in parallel with the HIV epidemic, crack use has increased dramatically across the world since its introduction in the USA in the 1980s, mainly in deprived neighbourhoods of metropolitan areas (6,12-15). Crack gained widespread use in many neighbourhoods, particularly among poor young adults who were members of minority groups (6). For the most part in the United States, crack use is present among all ethnic groups but is most common among African American residents in low-income inner-city neighbourhoods (16-18).

The introduction of crack cocaine to the drug economy led to rapidly expanding opportunities for street-level drug selling by increasing access to supplies and a very portable drug (19). These shifts were accompanied by “simultaneous changes in the

social and economic contexts where drugs are bought and sold” (19). Crack created entry-level roles for new dealers with little experience and required minimal start-up capital to sell this very addictive substance (19). It has been said that since its arrival, crack has become an important, ongoing, and destructive influence across societies (20).

1.2 Relevancy and Canadian Context

In Canada, the most commonly used drugs are alcohol, tobacco, cannabis, hallucinogens and cocaine. Evidence shows that crack cocaine has dramatically increased in Canada due to its affordability and availability (21). Since the 1990s, crack use has increased in injecting and smoking, particularly among street-involved people who use drugs (11). In the most recent report from *I-Track*, a pan-Canadian surveillance study conducted by Health Canada, it was reported that 65.2% of surveyed injection drug users across Canada had smoked crack in the past six months (22). An Ottawa-based evaluation, which was published in 2008, found that cocaine was the second most commonly used non-injection drug overall in an Ottawa-based sample of drug users (21). Although the change in drug use in Canadian communities is documented, there is limited evidence of the impact that crack cocaine, and the associated drug use behaviours, have on the health outcomes of users, particularly their daily health concerns as well as the risks for disease transmission, such as HIV and the hepatitis C virus (HCV).

Disease transmission, as a result of the sexual behaviours of crack smokers, is well documented and will be addressed in this report accordingly. However, there are emerging concerns regarding the possibility of HIV and HCV transmission as a result of

crack smoking behaviours, particularly as a result of the multi-person use of crack inhalation implements (8,11,21,23,24).

Outside of sub-Saharan Africa, up to 30% of all HIV infections occur through injection drug use (25). As a result, the majority of literature surrounding the drug-using population has focused on individuals who inject drugs, yet there is a large proportion of Canadians choosing to smoke crack. Although smoking crack has not traditionally been viewed as high-risk as injecting, recent virologic and epidemiologic evidence indicates that individuals who smoke crack are at an increased risk of contracting both HIV and HCV, however the risk factors associated with unsafe smoking practices are not as well understood (23,26). It is evident that subgroups of the population are at an increased risk for disease therefore it is imperative to not only assess the overall effectiveness of programming, but to assess how well programming meets the health needs of high-risk individuals, such as women and youth.

It is estimated that between five to ten thousand Canadians are co-infected with both HIV and HCV. The Public Health Agency of Canada (PHAC) published the most recent national estimates for HIV infection across Canada in 2008. In this report, PHAC states that there are currently more Canadians living with HIV infection, an estimation of approximately 65,000 people, compared to 57,000 people in 2005. Further, PHAC states that new HIV infections are on the increase. An estimated 2,300 to 4,300 new infections were reported in 2008, compared with 2,200 to 4,200 in 2005 (27).

In Canada, Aboriginal communities are significantly affected by HIV and are disproportionately represented within the epidemic (27). Although 3.3% of the Canadian population is Aboriginal, they represent more than 7.5% of those infected with HIV in Canada (11). Women who use drugs are also disproportionately affected by HIV and since 1996, approximately 25 to 50% of new HIV test results among Canadian women are as a result of unsafe drug use (11). Significant gaps exist in prevention and harm reduction programming in Canada as many individuals at high risk for HIV or HCV infection either have no or limited access to proven prevention tools (28).

There is a large need to improve crack smoking interventions and health-based programming in order to address issues such as race, gender, ethnicity, culture, sexual orientation, age, and socioeconomic status in order to increase accessibility (11). Public health campaigns for people who smoke crack have been highly controversial in Canada and although there is increasing support for programs directed at injection drug use, there is still limited acceptance and support for programming directed at crack smoking (23). To recommend improvements to these initiatives, it is first necessary to develop a comprehensive profile of the individuals who smoke crack cocaine as well including the health concerns they face, as well as their ability to access prevention or treatment services for these concerns.¹

¹ Throughout this thesis, different terms will be used when referring to people who smoke crack including “crack smokers” and “crack users”. When conducting the interview portion of this thesis, individuals who smoke crack were asked for their opinion on the most appropriate terms to use. The terms used in this research were all deemed appropriate and non-offensive by the interview participants.

1.3 Objectives for this Project

This Master's thesis project was undertaken with the purpose of fulfilling three overarching objectives by answering research queries within each section.

1. To conduct a systematic review of the academic literature in order to frame responses to the following questions:

- a. What are the demographic and behaviour characteristics of individuals who smoke crack cocaine?
- b. What is the range of health-related risks associated with smoking crack cocaine that are specific to individual drug use behaviours?
- c. What are the options available to individuals who wish to change or reduce the harms associated with their crack smoking?
- d. What crack-specific harm reduction strategies have been utilized in Canada?

2. To conduct interviews with men and women living in Ottawa who smoke crack cocaine in order to determine:

- a. What are the healthcare experiences of Ottawa residents who smoke crack?
- b. What is the availability of drug treatment programming and harm reduction services in Ottawa?
- c. What crack-specific harm reduction resources are most needed in Ottawa?

3. To discuss the findings from the systematic review as well as the qualitative interviews in order to:

- a. Compare the experiences with those in Ottawa to those in the literature.
- b. Provide recommendations for future programming and policy decisions based on the literature and interview data.

2.0 SYSTEMATIC REVIEW

2.1 Research Question

This review sought to synthesize evidence from published literature, both primary studies and reviews, in order to frame a response to the question:

What are the demographic characteristics and risk profiles of individuals who smoke crack cocaine and what opportunities exist for to reduce drug-related harms among this population?

2.2 Methodology

In this thesis, the review of literature was done in a systematic and comprehensive nature. Although this review does not include a meta-analysis or quantitative component, the methodologies are consistent with a systematic review, which involves identifying a focused research question and appraising and synthesizing quality evidence in order to frame a response to the research question.

2.2.1 Search Strategy

A systematic search of the published literature was conducted on May 12, 2010. The following bibliographic databases were searched through the OVID interface: MEDLINE, EMBASE, CINAHL, and PsychINFO. The search strategy used was comprised of both controlled vocabulary, such as the National Library of Medicine's MeSH (Medical Subject Headings), as well identified keywords, which were not otherwise captured through MeSH indexing. There were no filters applied to publication date. See search strategy in Appendix A.

To be included within this review, articles must have been written in English and must have provided a descriptive profile of crack smokers OR must have discussed a program, policy, intervention or health issue specific to people who smoke crack. No restriction was set on date of publication or whether the article was a primary study or review. The broad inclusion criteria were based on an initial presumption that articles on this topic were more limited in the literature. By keeping the inclusion criteria minimal, this allowed for a more comprehensive presentation of results. See Relevancy Testing form in Appendix B

The inclusion criteria were applied to the title and abstract of returned results, when possible. Articles were subjected to two rounds of abstract screening, which became necessary due to the volume of results from the literature search. Following abstract scanning, full text hard copies of articles were obtained for those articles that were deemed potentially relevant for inclusion. Based on the full text reading, a study was subsequently included in the review if it satisfied all inclusion criteria.

Following this, all bibliographic lists of included articles were consulted for additional, potentially relevant studies. If an article was judged to be potentially relevant based on its title, the abstract was read and a full text assessment of the article was conducted.

All included articles varied substantially in terms of their design, presence of an intervention, population, data collection methods, as well as data analysis and presentation. As such, no effort was made to quantitatively pool the results within the

review. Further, presenting study findings in tabular form for comparison was not possible due to the variability across included studies. Rather, all studies were summarized and qualitatively compared in order to provide a descriptive, robust profile of individuals who smoke crack cocaine and the unique health-related problems with which they are faced.

2.2.2 Relevance Assessment

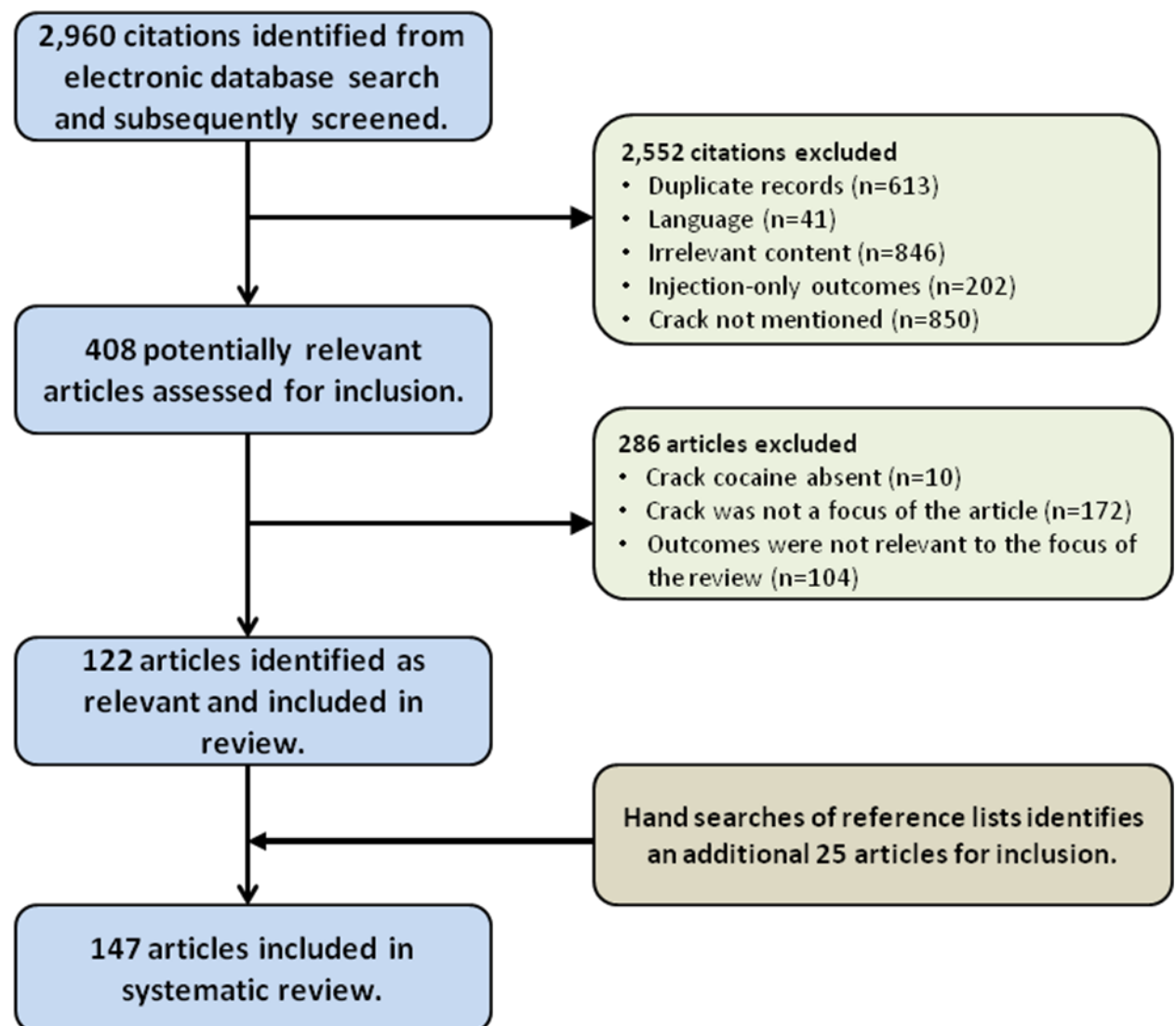
The literature search generated 2960 results. After the removal of duplicate records, 2350 articles remained. The abstracts of articles were then read for relevancy and potential inclusion in the review. Following this first pass, 938 records were retained on the basis of potentially relevant content (n=669) as well as articles that did not have an abstract (n=269) and therefore were unable to be assessed. The 269 articles without abstracts were assessed for relevancy based on their title, when possible, and from here 52 articles were included for the next round of screening.

A second, more discriminatory abstract scan of the retained articles (n=721) was conducted in which 408 articles were retained for full text reading. The primary reason that articles were excluded at this stage was on the basis of drug type and description (e.g. cocaine rather than crack, article about drugs in general, etc).

The final round of screening included the reading of 408 full text articles. Articles were read for the presence of crack cocaine and whether crack was a focus (n=71) or an unintended outcome of the study (n=51), either of which were satisfactory for inclusion in this review. At this stage, the primary reason that articles were excluded was on the basis that a discussion or evaluation of crack cocaine was absent in the article. During Round 3, a total of 286 articles were excluded leaving 122 articles included in this review.

Of the 122 articles that were included, all bibliographic lists were consulted for additional, potentially relevant articles to include. If an article was judged to be potentially relevant based on its title, the abstract was read and a full text read of the article was conducted, when appropriate. From this stage, an additional 202 articles were considered and 25 were subsequently included in the review. Figure 1 below demonstrates the article selection process for this review:

Figure 1: Article Selection Process



In total, 147 published articles were included in this systematic review. The 147 individual studies that were included can be found in Appendix C.

Data collected from the 147 included articles was used to frame a response to each of the four research questions posed during this review. The evidence gathered will be organized according to these research questions and will be presented in four sections of results, one per research question. Additional articles and sources which substantiate evidence from the 147 review articles were referenced to provide additional depth and context for the findings. These additional articles were included to provide additional context and background information however, did not meet inclusion criteria for the review.

2.3 Developing a Profile of Individuals who Smoke Crack

The first section of the systematic review addresses the first research question which focuses on the characteristics of individuals who smoke crack cocaine and will aim to develop a comprehensive profile of this population. In order to do so, four different aspects will be considered: i) typical patterns of crack cocaine usage, ii) the addiction to crack cocaine, iii) typical demographics and personality traits among those who smoke crack cocaine, and iv) unique differences which exist between individuals who smoke crack and individuals who inject drugs. This section on profile development will provide insights into the individuals who use crack and their particular demographics in order to gain a familiarity and understanding of this population.

2.3.1 Descriptive Profile of Crack Cocaine Usage and People who Smoke Crack

2.3.1.1 Crack Use Patterns

In 1989, one of the earliest ethnographic studies of crack cocaine was conducted (29). Upon observing an inner-city neighbourhood in San Francisco, investigators observed that crack dealing is not casual or unorganized, but rather very coordinated. Many people sell crack to support their own addiction and rely on both sex and crack as “the currency of exchange.” Bowser suggested that the very portable and affordable nature of crack makes it especially dangerous, as it does not require specialized equipment like heroin, and is available and could be considered an entry-level drug amongst teenagers. As a result, Bowser speculated that crack would spread to a larger proportion of the population than heroin. The study concluded that there was no reason to believe the

chemical properties of crack would lead directly to viral transmission of diseases, such as HIV, however the tendency of crack to lead to high-risk behaviours served as an indicator that crack may become indirectly linked with an increase of incident cases of HIV.

The initiation of crack use is typically preceded by the use of other drugs, particularly marijuana and cocaine (30). Polydrug use, the use of more than one type of drug at a time, is a phenomenon observed among cocaine users in multiple studies (9,31-34). Among a study of dual users of cocaine and crack cocaine (35), approximately two-thirds of dual users (66%) initiated drug use by using powder cocaine and then moving to crack. It has been suggested in many studies that intranasal cocaine use, or “snorting”, may be gateway behaviours to crack smoking (35,36). It has also been shown that crack users engage in polydrug use more often than other drug users, and those with severe crack dependency report a median of five different drugs which they routinely use (37). The mixing of drugs, and the intense high associated with crack, can result in a more dangerous and sustained addiction.

In 2006, Vivancos and colleagues (37) reported on both crack and cocaine use among drug users in rural England. The majority of participants were introduced to crack through their other drug use and most often by the same dealers. Participants reported that crack, cocaine and heroin were generally intertwined and that many began with marijuana and transitioned to harder drugs over time. In a 2004 study, Day et al observed that crack users usually obtain their first rock of crack from a friend, or

someone they know, although subsequent rocks are usually purchased from unrelated dealers (38). With respect to first use, women report first using crack most often at home, with someone bringing the crack to their home, whereas men report initiation most often at a friend or dealer's house (39).

Irwin and colleagues (40) conducted a study among 1200 street-recruited crack smokers in Miami, New York, and San Francisco to better understand the transitioning between crack smoking and drug injection. When comparing consumption patterns, they found that participants who had turned to injecting also reported smoking crack more heavily than non-injectors, meaning that they smoked on more days and loaded their pipe more often in the one month prior to interview. Further, injectors had smoked crack for a longer period of time than non-injectors (40). This study served as one of the first to demonstrate the role crack plays as a potential gateway drug to injecting among adolescents, although the same results have been observed in subsequent studies (41,42,42-44). More locally, in 2003, Roy and colleagues (43) reported on a Montreal-based study, which found that crack use was a strong predictor of injection drug use initiation among a sample of street youth.

The relationship between crack smoking and injecting can be considered bidirectional, as there is also evidence indicating a transition from injecting to smoking. In Brazil, for example, there have been changes in the route of drug administration and patterns of cocaine use, which shows an increase in the number of people reporting crack use in the last decade (32,33). Although crack became visible in Brazil in the early 1990s, it

was rarely seen in rural areas or smaller cities outside of Sao Paulo before 2000. Investigators reported that the main reasons associated with the decline in injection drug use (IDU) included: fear or mortality associated with IDU, declining quality of street cocaine, a shift towards smoking crack, and an increase of fear and awareness of HIV-related risks associated with injection (1). When the quality of powdered cocaine declined, injection was made more difficult and drug users were more willing to begin smoking crack. Similarly, other studies found that women living in high-prevalence areas of HIV were more likely to report a transition from injection drug use to crack smoking exclusively, out of fears of HIV transmission. Interestingly, this was not seen among women living in low-prevalence areas of HIV incidence, as these women most often reported no change in their injection behaviours (45).

2.3.1.2 The Addiction to Crack Cocaine

An addiction to crack cocaine is both severe and all consuming. Compared with those who inject cocaine, crack smokers are more likely to report intense cravings for the drug of choice (46), which lead to impaired control over their drug use (36,46). Overall, they tend to present higher levels of severity in drug dependence, which often leads to higher levels of involvement in violence, crime, and prostitution (2,46,47). In a different comparison to cocaine snorters, crack smokers were again more likely to report cravings and a loss of control over their drug use (46).

In 2004, Day and colleagues (38) reported on crack smoking among homeless drug users. They found that just less than half of the sample (43%) reported that the onset of regular crack use was either immediate or within days of smoking their first rock of

crack. Almost two-thirds (61%) reported being addicted to crack within the first two weeks of use. Among participants in this sample, crack use quickly and directly led to their current state of homelessness (38).

2.3.1.3 Demographics and Personality

Crack cocaine users are among the most marginalized individuals in a population. For the most part, crack smokers are financially disadvantaged and often medically uninsured (2,46,48,49). Crack use is associated with unemployment and (2,49) lower levels of education (46,48,49), and higher levels of homelessness and unstable housing (2,46). Compared with IDUs, crack smokers are also more likely to be single (50) and to live alone or in shelters (50). They are also more likely to report daily alcohol use (50).

It has been shown that crack users are typically more socially isolated compared to users of other drugs (51). Compared with injection drug users, many studies have found that crack smokers are significantly more likely to be male rather than female (50,52) and more likely to be African American (6,47,52,53) than Hispanic or white (6). Studies have had conflicting results on the age of crack smokers. Some have observed crack smokers to have a higher median age than IDUs (2,46) while others have found that crack smokers typically constitute a younger demographic (52,54).

When assessing frequency of crack use among active users in the 22 American cities, Hoffman and colleagues (55) found, perhaps unsurprisingly, that employment status varied based on crack usage patterns. Those who smoked crack most often, and in large

amounts, reported the highest amounts of unemployment and if employed, were only employed on a casual basis. People who smoked crack less often and in smaller amounts however, were more likely to report being employed and had the highest rates of full-time employment.

Crack cocaine users demonstrate significantly higher levels of impulsivity and risk-taking propensity, when compared with cocaine users and heroin users (56), often resulting in an unstable lifestyle. It has been suggested that impulsivity may predispose some individuals to perceive drugs such as crack cocaine to be particularly addictive and rewarding (57). It has further been shown that crack can significantly alter one's behaviours and personality (58). A recent report (56) has shown that crack users are more likely to engage in higher levels of risk-taking behaviours than heroin users. It is unclear however, to what extent the findings are due to the specific intoxication effects of crack and/or the personality differences that may underlie drug preferences. According to Bornovalova et al (56), crack smokers were significantly more risk-prone and impulsive than heroin users, despite the absence of acute drug effects.

2.3.1.4 Distinguishing Crack Smokers from Injection Drug Users

There are important differences that exist between people who inject drugs and people who smoke drugs. Historically, drug prevention campaigns and health-related programming efforts have often combined these two groups together as one, or have predominantly focused on injection drug users.

The previous focus on IDUs in the literature and in healthcare policy and programming, arose based on the evidence demonstrating the high rates of mortality from overdose and the risk of bloodborne disease transmission from using previously used needles and injection preparation equipment.

It is essential however, to distinguish crack smokers from injection drug users by examining different behaviours and traits, in order to best identify their exact health-related needs. In 2007, Brewer et al observed that specific barriers created by crack cocaine use are different than those created by injection use (59), therefore these unique barriers must be carefully considered.

There is an interesting and often tension-filled dynamic which exists between crack smokers and injection drug users. It has been reported that IDUs hold a negative perception of crack users. Strenski and colleagues (58) interviewed drug users in shooting galleries and found that IDUs have a perception of crack smokers, which makes for an often hostile relationship. IDUs reported being wary of crack smokers because they described a “type of personality, drawn to the drug” as a threat, as well as the crack-specific usage patterns. Over time, however, it has been shown that crack and crack users have become more acceptable to IDUs, which is evidenced by the uptake of crack smoking among many injection drug users (50). Suggested reasons for this increased acceptance, as well as the reasons why IDUs began using crack, include a fear of HIV infection through needle use (50) as well as the widespread availability and affordability of crack cocaine (21,50).

2.4 Health-related Risks Associated with Crack Smoking

The second section of the systematic review will aim to address the second research question which focuses on the range of health-related risks associated with smoking crack cocaine that are specific to individual drug use behaviours. In order to do so, four major areas will be addressed: i) sexual risk behaviours associated with crack cocaine, ii) risks among women who smoke crack cocaine, iii) specific health outcomes and disease transmission risks associated with crack cocaine, and iv) difficulties in accessing health services among those who smoke crack. Each of these areas will include sub-sections to provide more detail on the particular area of risk. This section on the risk profile of individuals who smoke crack cocaine will provide an understanding to the disproportionate level of health-related risks faced by this population.

2.4.1 Sexual Behaviours Associated with Crack Cocaine

Between 1986 and 1988, the introduction and subsequent explosion of crack in major American cities, coincided with the epidemic of syphilis in New York City (60,61). Since then, numerous studies have investigated the link between the use of crack cocaine and the engagement in high-risk sexual practices. The neurochemical effects of crack cocaine have been shown to be associated with high levels of sexual promiscuity (62). Scientists have suggested that the transmission of HIV among drug users via sexual routes may be as important as transmission by unsafe injection practices (63).

Numerous studies have shown that people who smoke crack are more likely to engage in sex with multiple partners (6,38,55,57,64-71). Female crack smokers, for example,

were found to be six times more likely than non-crack users to have had more than 20 sexual partners (6). Broadhead and colleagues found that crack smokers were more than four times more likely to report having had multiple sexual partners in past month compared with IDUs (72). The heterosexual spread of HIV/AIDS has been significantly and repeatedly linked to the use of crack cocaine (72-75) and it has been suggested that crack users may serve as a bridge for heterosexual transmission of HIV through unprotected sex with other drug users who are HIV positive (53,76).

Compared with non-crack users, those who smoke crack are more likely to report unprotected sexual encounters (6,38,53,55,64,77-84). In fact, women who smoke crack report being unable to resist engagement in high-risk sexual acts due to the intense high of crack and often feel incapable of negotiating condom use and safer sex (38,77). The subservient role played by women in the crack industry places them in a vulnerable position and many report being violently threatened when trying to negotiate safer sex (55,77). As a result, women who smoke crack have a sense of powerlessness for protecting themselves against sexually transmitted infections, including HIV (77).

2.4.1.1 Risk of Sexually Transmitted Infections and HIV

Crack smoking has been shown to be independently predictive of the occurrence of STIs (6,48,64,71,76,85-90). Male and female crack smokers are at significantly higher risk of contracting an STI compared to people who do not smoke crack. Crack smoking women have been found to have poorer sexual health outcomes than crack smoking men, as these women are more likely have had a sexually transmitted infection (STI)

(88). Specifically, female crack smokers were shown to be four times as likely to have syphilis or other STIs (6) including higher levels of gonorrhea, Chlamydia and genital sores (48,87,91), and genital ulcer disease (88).

Crack smoking may lead individuals to be less aware and less concerned about STI symptoms compared with those who do not use drugs, therefore increasing the threshold for attending clinical services (54). Drug users are more likely to have a high prevalence of asymptomatic STIs and be less likely to use standard STI clinics. As well, there is a greater likelihood of undiagnosed and untreated STIs among crack using women as many STIs do not present with obvious clinical symptoms in females (92).

In 2004, Paz-Bailey and colleagues reported on a syphilis outbreak among Hispanic immigrants in Alabama (93). They found that over 90% of cases in the outbreak were linked to commercial sex work and almost all of the sex workers reported using crack cocaine. It was suspected that the availability of commercial sex and inadequate health services for this population likely led to delayed detection and a subsequent outbreak. Similar conclusions were drawn by Sena and colleagues (94) in 2007, who reported on a syphilis outbreak in rural North Carolina. Among this sample, 30% reported crack cocaine use, 46% reported having sex with a casual or long-term partner who uses crack, and 51% reported having sex for drugs or money, and of those 63% were using crack. Investigators noted that this outbreak is similar to other syphilis outbreaks over the past 20 years where a lack of education and prevention services likely led to the high number of infected individuals.

During multivariate analysis, multiple studies have found crack smoking to be associated with HIV infection (6,53,67,85,86,91,95,96). Adolescents (67) and women (53,97) were found to be particularly at risk, even among those with no history of drug injection, which would be a traditional risk factor for infection. HIV positive women were significantly more likely to have reported crack cocaine use, even if crack was not their drug of choice (75). Cleghorn and colleagues (91) found that both crack cocaine and marijuana were associated with HIV in univariate analysis, but only the use of crack in the previous six months remained a significant risk factor for seropositivity. Similarly, in a study of high-risk Puerto Rican drug users living in New York City, crack use was a statistically significant predictor of seroconversion. In the study, 100% of the seroconverters had smoked crack in the previous six months (95). Reid and colleagues (98) had consistent findings when evaluating the risk behaviours of homeless drug users in the Caribbean. Investigators observed that women who were HIV positive were more likely to use crack cocaine (98).

Metsch and colleagues (48) reported on HIV prevalence among people who use drugs and the observation that HIV seroprevalence differed when comparing men and women and their crack cocaine use. They found HIV prevalence to be highest among women who used crack (23.6%), followed by men who smoked crack (17.8%), followed by men (7.4%), and women who did not smoke crack (7.3%). Similarly, McCoy and colleagues (99) similarly found that compared with individuals who did not smoke crack, those who did smoke crack (with no history of injection) were approximately three times

more likely to be HIV positive than those who reported to have used illicit drugs but never smoked crack (OR=3.17; 95% CI: 2.25-4.47). Most recently in 2006, Davis and colleagues (100) reported on a study among users and sellers of crack cocaine in central Harlem. Investigators observed that those who had ever used crack cocaine or powder cocaine were significantly more likely to be HIV positive compared to those who had never used cocaine (100). In multivariate analysis, both “ever using crack” and “having multiple sex partners” were significant in univariate analysis, but only “having multiple sex partners” was significantly associated with HIV infection during multivariate analysis.

Three different studies (37,55,101) investigated the intensity and the frequency of crack smoking as it relates to HIV infection in women. A Canadian (101) study found that participants who smoked crack in high amounts on a daily basis were significantly more likely to have HIV. In 2000, an American study (55) similarly found that participants who smoked crack more often were significantly more likely to test positive for HIV. In fact, they found that women, who smoked crack frequently and in large amounts, were seven times more likely to become infected with HIV compared with women who smoked crack in smaller amounts (55). Conversely, however, a study based in rural England (37) found that there was no difference in the prevalence of HIV infection among those with or without “severe” crack dependence. They did find, however, that those who were severely dependent on crack were significantly more likely to be infected with hepatitis C and hepatitis B (37).

2.4.2 Women as a Vulnerable Subgroup

Based on the findings in the published literature, women who smoke crack are a unique subgroup garnering special consideration. Women who use crack not only have different roles in the drug trade economy, but they also are differentially at risk for adverse health outcomes, including disease transmission.

2.4.2.1 Women and the Crack Economy

In the street economy of drug use, it is uncommon to find a woman who works as a drug dealer. Maher and Daly (102) for example, conducted fieldwork in Brooklyn with more than two hundred women. During this study, they did not come across a single woman who was a drug business owner and only found one who had any managerial role. For the most part, urban crack markets are highly stratified by gender and women who are involved in the drug trade are lower in the selling hierarchy, selling drugs irregularly or selling only drug paraphernalia (102). Males most often monitor a woman's activities in the drug scene, which also means that any movement within roles is restricted by the male-dominated networks (103). Although women find this to be disadvantageous, they do however, feel less often targeted in arrests or police investigations (103).

Compared with men who use crack, women report more income from social assistance, a partner, or from sex work (104). As such, this income structure for female drug users places them in a situation where they are both dependent and vulnerable to men (104). The high levels of violence, which are a part of the "crack economy", further limits a woman's involvement and most often is sufficient to exclude them entirely.

Women who smoke crack are more vulnerable to, and often experience, heightened levels of physical and sexual violence (105). It has been posited that this is perhaps a direct result of the hierarchical structure of the drug market (103,106). El-Bassel and colleagues (105) suggest that violence towards these women may also be because they are perceived as violating cultural norms of acceptable female behaviour, which is especially prevalent among women who often visit well-known drug use sites (105).

There is a growing racial disparity in HIV incidence rates that are primarily affecting African American women (100,107,108). African American women who use crack are particularly vulnerable to HIV as a result of their exposure to violence, crime, social stigmatization, and high rates of victimization (47,109-111). The emergence of crack-using African American women as a new HIV risk group has led to increased attention and focus for developing targeted prevention and education efforts for this population (100,109).

2.4.2.2 Commercial Sex Work and Crack Cocaine

Due to the intense nature of crack cocaine addiction, there is a tendency for crack smokers, particularly women, to engage in commercial sex work. Women who use crack cocaine have been shown to a higher likelihood of engaging in prostitution and sex-for-drugs exchanges when compared to women who do not use crack (6,40,57,65,67,74,78-82,105,112-118).

Goldstein and colleagues (119) found that particularly among women, the need for crack is so intense that they are more willing to compromise boundaries and participate in various levels of sex exchange for crack. The need to obtain more crack becomes primary and women are willing to compromise their safety by putting themselves in dangerous locations and inconsistently using condoms. Siegal and colleagues (120) found that among women who use crack, those who traded sex for drugs were much less likely to use condoms than other women who traded sex for money (120).

In Porte Alegre, Brazil, Inciardi and colleagues (1) conducted a study to evaluate HIV transmission risks among Indigenous women. They found that many of these women had developed an addiction to crack cocaine and resorted to prostitution or “sex-for-crack” exchanges. Since this population of women had little to no income, prostitution was perceived to be the only option for these women to obtain crack. One of the female participants in their study reported that “oral sex is about BRL\$5 (about \$3 CDN), which is about what you need to buy a rock” (1). Of concern to the researchers, was the lack of barriers to the types and places for these sexual transactions, which most often jeopardized the health and safety of the women. These findings are similar to those presented by Gilchrist and colleagues (121), who looked at sex workers in Glasgow, Scotland. Investigators found little evidence that suggested that any of the women were first introduced to crack through prostitution. Rather, almost all women (93%) reported using crack with friends prior to their involvement in the sex trade and many

were offered crack from dealers. Subsequently, many then entered the sex trade to support their crack use (121).

Aboriginal women in the sex trade, for instance, face additional barriers and vulnerabilities associated with the “multigenerational effects of discrimination, social dislocation, and entrenched poverty” (122). Aboriginal women are significantly overrepresented in the sex trade in Vancouver and although Aboriginal people represent only 3% of the general Canadian population, Aboriginal women constituted almost half of sample in this Canadian study (122).

In Vancouver, Shannon and colleagues (123) found that not only did these women face heightened levels of violence from clients, but this violence often kept them from going into more populated areas of the Downtown Eastside (DTES) where drug- and sexual-based harm reduction services were located. Further, fear of arrest as a result of their sex work also prevented them from approaching police officers for safety. It was found that there was a significant geographic correlation between a heavily concentrated area of health services and avoidance as a result of violence as well as policing of sex workers (123). These findings are consistent with a Scotland-based study that showed that female crack users who conduct sex work are disproportionately at risk for violence and abuse (121). Through interviews, women expressed that there was more violence in the sex trade after the introduction of crack and cocaine among sex workers. They reported an increase in clients and sex workers being robbed as well as sex workers robbing each other (121).

Edlin et al observed that female crack smokers were approximately 14 times more likely to have ever sold sex (6), compared with women who did not use crack (PR=13.5; $p<0.01$). There is also evidence of a dose-response relationship, where women who used crack more frequently and in greater amounts, were significantly more likely to exchange sex for money (74). Hoffman and colleagues (55) similarly observed that among female crack smokers, high frequency and high-intensity crack use, which is smoking at least five times per day, was found to be an independent predictor of involvement in commercial sex work (55).

Certain factors have been shown to be more highly associated with sex work among crack smokers, such as having relationships with men who use crack (37,74,124,125). In 2006, Vivancos and colleagues observed that women consistently reported a link between prostitution and their crack use. Interestingly, many women had been introduced to crack by a dealer, who originally posed as a boyfriend (37). Once the woman was addicted to crack, the dealer demanded money for the drugs, which led many women to engage in prostitution and sex-for-drugs transactions out of desperation. From that initial point, women reported subsequently relying on prostitution to fund their drug use, which often led to increased violence and chaos in their personal lives (37). Investigators reported that among all drugs assessed in this study, crack cocaine use was “more likely to lead to risky or extreme behaviour than any other drugs.”

Sex workers who smoke crack while working are more willing to take sexual and personal risks in order to finance their drug use, even if it jeopardizes their immediate or long-term safety (102,116,118,126,127). Several researchers have noted that sex workers who smoke crack will engage in higher rates of unprotected oral and vaginal sex in exchange for more drugs and/or more money (9,112,118,124,128). Among female cocaine-using prostitutes in London, England, women usually used condoms with clients but once a client became a supplier, or a smoking partner and sex was traded for crack or money, this was no longer the case (129).

2.4.2.3 Increasing rates of HIV among women who use crack

Due to the high rates of engagement in commercial sex work by women who use crack, it has unsurprisingly been observed that women who use crack are displaying increasingly high rates of HIV infection. Although engagement in sex work is only one reason why this population is at risk for the disease, it is an important consideration in health services and prevention programming.

It has repeatedly been shown that women who smoke crack have significantly higher rates of HIV infection in comparison to women who do not smoke crack cocaine (48,70,125,128,130-132). Among crack users, sex work which is conducted in a crack house for example, has been found to be especially unsafe, and often more likely to lead to HIV infection (125,132,133). Through multivariate analysis, Heffernan and colleagues (67) were some of the first to identify that being paid for sex (OR=45.5; 95% CI: 4.5-464.1) and crack smoking (OR=41.0; 95% CI: 5.6-297.6) were both strongly and independently associated with HIV infection among women. Women who smoke crack

and exchange sex for money or drugs have been found to have rates of HIV infection comparable to those of men having unprotected sex with men (6,78,134,135). A primary reason that explains increasing rates of HIV among women is related to their biological vulnerability of contracting the virus (100). The transmission of HIV from male-to-female is 2.3 times greater than that of female-to-male transmission (136,137).

In 1998, Tortu and colleagues (138) observed that women are at disproportionate risk for HIV transmission as a result of their reliance upon sex work. Investigators observed gender differences in crack smoking among urban drug users and found that women were using crack on more days than men in the past month and were also smoking crack more times per day than men. For women, approximately one-third (29%) relied on sex work as their primary source of income, whereas this was reported by only 2% of men. This is consistent with findings by El-Bassel who conducted a study of female sex workers in New York City and observed that 52% of them had exchanged sex for crack, and only 4% had exchanged sex for other drugs (139).

In 2000, investigators (45) reported that among drug users in the United States, newly diagnosed cases of HIV infection were more likely to be among women. In this study, investigators found an increasing trend of HIV incidence as a result of heterosexual transmission and a decreasing trend of infection as a result of injecting drugs. Tortu et al went on to suggest that models of infection may be different for male and female drug users due to the role of heterosexual transmission. Women are at a much higher risk of HIV infection due to both biological and social reasons (45).

In 2004, Surratt and colleagues (130) observed that homeless women who had been involved in sex work for five years or more (OR=5.6; 95% CI: 2.00-15.87) or who had smoked crack cocaine for five years or more (OR=2.42, 95% CI: 1.08-5.55) were significantly more likely to be infected with HIV compared with women who worked in the sex trade for a shorter time. The investigators found that the compounding of sexual risk factors is particularly problematic among women who smoke crack. In comparison to sex workers who were stably housed, sex workers who were homeless were significantly more likely to be past and current daily users of crack. Investigators observed that as a women's homelessness and crack addiction increased, so did her likelihood to engage in high-risk sexual behaviours (130).

During this time, increasing rates of incident HIV cases were observed in many cities across North America (130). In particular areas of the United States, which were investigated in 2001, women accounted for almost 30% of new infections across the population. In fact, the US Centres for Disease Control and Prevention declared that HIV among Miami's African American women to be at state-of-emergency levels (130). It was at this time where health officials identified that African American women are faced with a disproportionate burden of the HIV epidemic, women in general are increasingly vulnerable due to a variety of factors including those associated with transmission efficiency and sociocultural issues (77,140-143).

In 2005, MacMaster and colleagues discussed the unique challenges and barriers facing African American women who smoke crack (107). The authors explain that although

many individuals who use drugs face a number of barriers to HIV prevention and treatment services, women who smoke crack cocaine who are also African American are subject to “a unique environmental context with specific stressors that has a direct and dramatic effect on health outcomes, specifically related to HIV/AIDS.” These findings were consistent with those by Davis and colleagues (100), who conducted a similar study among individuals who use and sell drugs in Central Harlem. They found that of the 637 specimens that they tested, women were significantly more likely to test positive for HIV than males, with a total of 30% of the women sampled testing positive. African American women were also more likely to test positive than Caucasian women. The authors attribute this large proportion to the efficiency of male-to-female transmission of HIV as well as social disadvantages reported by the African American participants.

2.4.2.4 Perceptions of Risk and Public Health Implications

At the beginning of the HIV epidemic, women were not initially considered to be at risk for contracting the disease. As such, women were largely overlooked in many HIV prevention and education interventions. Early prevention initiatives were largely geared at gay men and individuals who inject drugs. Based on an inaccurate perception that they were not at risk, there was an absence of appropriately tailored education campaigns targeted at women (107,108,144). Although it is now understood that women are at risk for contracting HIV, there is still an inaccurate perception of transmission risk among many females, especially those who engage in drug- and sex-related risk behaviours.

For an intervention strategy to effectively reduce HIV transmission risks for a woman, she must first believe that she can personally be infected (144). It is this perception of risk that will directly impact engagement of high-risk behaviours, such as unprotected sex, as well as health-seeking behaviours, such as accessing testing for HIV and other STIs. It is particularly important to understand, the perception of risk among marginalized women, particularly crack smokers, who have an increased vulnerability to HIV.

Alpert and colleagues (85) found that when physicians conducted behavioural risk assessments among patients, women were far less likely to report identifiable risks for HIV transmission. Either a reluctance to report these behaviours, or the physicians' expectations, may have both contributed to the lower rates of recognition of HIV in female patients. As a result, the authors believe that physicians who rely strongly on a typical risk factor assessment could miss a substantial proportion of women who may require testing or treatment for HIV.

In 1998, Singer and colleagues (144) reported on a study conducted among female drug users in Hartford, Connecticut. During interviews with the women, they found that the vast majority underestimated their risk for contracting HIV. Over half perceived that they had little to no risk of ever contracting HIV, despite high rates of drug- and sex-related risk behaviours. Following an educational intervention regarding risk behaviours, there was a significant increase in the proportion of women who had an

accurate perception of risk, indicating to investigators that education was efficient in shifting perceptions of risk. Further, women who had reported increased risk perceptions post-intervention were more likely to report decreased frequency of risk behaviours including number of sexual partners and number of unprotected sexual encounters (144). In a similar study conducted among women who use drugs(145), women who had higher levels of social support and greater knowledge about HIV, had a more accurate level of risk perception regarding disease transmission. Further, women who had a higher perceived risk of HIV were more likely to seek HIV testing and return for the test results (145). Women with increased HIV-related education and an accurate self-perception of risk were best able to utilize problem-focused coping strategies and were more likely to take action regarding their personal sexual risks.

2.4.2.5 Engagement in Sex Work as a Barrier to Accessing Health Services

Female sex workers report difficulties in accessing public health services, usually facing long waiting periods before getting an appointment as well as experiencing prejudices and stigma in health facilities because of their drug use and their engagement in commercial sex (15,146). Violence and threats to their safety (147-149), have also been stated as reasons why women in the sex trade are reluctant to seek health services in the community, specifically services relating to HIV care.

In 2005, Vancouver-based researchers (122) reported on the access and utilization of HIV treatment and services among 159 female sex workers. Conducting a survey within a community drop-in centre for female sex workers, investigators were able to identify

important barriers for accessing HIV treatment. Of those who had tested positive for HIV, only 15% of the women had ever been on ART. Women experienced multiple barriers to accessing ART such as a fear of side effects (72%), lack of knowledge about treatment (68%), inability to follow the drug regimen (48%), inability attend follow-up medical appointments (55%), and a fear of others knowing their HIV status (46%). Investigators believed that increased awareness of privacy and confidentiality policies might lead women to feel more comfortable about testing. Although few women had initiated ART, there was high acceptability among women to access treatment through community-based approaches including drop-in centres or home delivery, indicating a need for appropriate, low-threshold services for this population. Since confidence and knowledge are inherently linked to ART adherence, investigators acknowledge the need for more counseling and education components with the initiation of ART to assist patients with the difficult transition (122).

In a similar study conducted in 2008 by Malta and colleagues (146), investigators assessed the health needs of female sex workers who use crack cocaine. This research team also found that there was a large gap in the services available to women, particularly a gap in services tailored to this population. For example, many women who had missed medical appointments or were unable to adhere to ART, reported that the operating hours of the clinic were the primary reason. The local facilities were not open during later hours and are only open in the morning, which is not conducive to the daily routine of sex workers. As a result, many women had trouble maintaining the ART regimen and did not have access to counseling or HIV and STI testing. Those that did

manage to attend health services and clinics in the early morning hours, felt stigmatized and discriminated against based on their sex work and therefore were much less likely to return for treatment and follow-up appointments, including appointments to receive test results.

2.4.2.6 Expressed Need for Female-specific Services

In 2000, Erickson and colleagues (150) assessed the service needs among female crack users in Toronto, Canada. For the most part, women expressed the need for simple services such as a place to shower or do laundry and a safe to sleep. Many mentioned the need for counseling, available on a 24-hour basis, as they kept hours that were often different than the general population. Some suggested a toll-free hotline as an option for providing this type of service. The broad harm reduction measures requested by women as well as increased housing and medical attention were believed by the women to be a more realistic ways to keep them alive and healthy, rather than focusing on drug abstinence.

A few years later in 2003, Butters and colleagues (151) also wrote about the healthcare needs of female crack smokers in Canada. Although the study aimed to focus on physical health outcomes of the women, when participants were asked about what types of services would be most useful to someone in their position, most responded with examples of mental health services. Specifically, women requested the availability of drug and sexual abuse counseling, ideally on a 24-hour basis, as well as a hotline to call with calls being answered by former crack users who could relate to their situation. Also, women felt they would find a drop-in crisis intervention centre very helpful to

assist them in drug- and sexual-related concerns when they arose. Based on the responses by participants, investigators concluded that although they sought to evaluate the comprehensiveness of physical health services, there is a large gap in the availability of mental health services available to this very vulnerable population.

In 2006, among female in-patient drug users in Trinidad, Reid and colleagues (53) were able to assess and make recommendations surround HIV-related programming. Based on requests from women, they recommend that screening for STIs, including those for HIV, should be available in all treatment centres for women. With respect to rehabilitation, most treatment programs do not currently offer formal education or the job skills enhancements, two aspects that women have noted to be of high importance when re-entering the community. Finally HIV and AIDS education programs should be designed to reach less educated and more marginalized groups of women. Many existing programming assumes a level of HIV-related education that many of the women in this study had not yet received.

2.4.3 Health Outcomes and Risks Associated with Smoking Crack

Crack smokers experience different health concerns compared with injection drug users and most often report a higher prevalence of physical health problems (2,48,126,152) and higher prevalence of psychiatric co-morbidities as well as high levels of cocaine-induced psychosis (153-156). Crack users face high mortality rates as they are at increased risk of acquiring infections, such as bacterial infections and infectious diseases, as well as being at increased risk for fatal overdoses (157,158).

Compared with injection drug users, crack smokers are more likely to lose interest in their physical appearance (1). Many have scabs on their faces, arms and legs as a result of burns and picking at the skin. Often, crack users have burns on their faces, including singed facial hair, from lighting pipes and other smoking devices (1). Many have chronic coughs or respiratory problems (1). An especially high prevalence of pneumonia in this population may be linked to either non-hygienic crack-smoking practices or to the reported home-preparation of crack, which often uses kerosene, gasoline, and ammonia (1). Some of the most common physical health concerns experienced by crack users are respiratory conditions (asthma and pneumonia) and communicable diseases, such as HIV and HCV (72).

In 2003, Falck and colleagues (126) conducted a study to assess the current physical health problems among a community-sample of crack users in Ohio. Overall, they found that compared with the general population, crack smokers had a higher rate of both acute and physical health problems. The rate of fractures, for example, was 5.7 times

greater among crack smokers, and the rate of wounds and lacerations was 1.6 times greater (126). Investigators report that these higher levels may be associated with violence, which is common among crack smokers, however does not discount the importance of the disproportionate rates of injury.

2.4.3.1 Crack Use and Risks for Disease Transmission

Although the sexual transmission risks among crack smokers have been thoroughly discussed here, there is another, possible form of transmission which must be considered. In North America, the prevalence of hepatitis C is significantly higher among users of heroin, crack, and cocaine when compared to the general population (159). Traditional risk factors that affect HCV transmission include injection drug use, perhaps frequent sexual partner exchange, as well as risky behaviours which provide the opportunity for blood-to-blood contact. Emerging evidence shows there are additional risk factors associated with drug use behaviours which exist outside of injection drug use.

Evidence highlights a higher rate of HCV infection among crack and heroin smokers who report no history of injection drug use, in comparison to the general population (159,160). The act of crack smoking has been correlated with HCV infection in numerous epidemiological studies (21,26,159,161). In one study, clinical patients with a dependence on crack cocaine had twice the self-reported prevalence of hepatitis C ($p=0.04$) compared with other drug users (37).

As IDUs are the traditional risk group for infection as a result of drug use, most research to date focuses on this population and allows for comparisons of risk between different types of drug users and shows the compounding risk often faced by crack users. In 2003, Osher and colleagues (162) reported on drug use and hepatitis C infection among people with severe mental illness. In this study, investigators observed high-risk behaviours among individuals who both inject drugs and use crack cocaine. They found that injection drug use is associated with elevated rates of HCV, but also observed an elevated level of risk with the smoking of crack cocaine. Although individuals who inject drugs are at an increased risk for disease transmission, participants who had smoked crack were significantly more likely to become infected with HCV (OR=5.22; 95% CI: 1.33-20.42) compared with those who had not smoke crack. Investigators conclude that adding crack smoking to injection use may magnify the risk of infection. In a second study among individuals with advanced mental illness (4), investigators conducted a multivariate analysis which showed that crack cocaine was an independent risk factor for HCV infection, which persisted even after adjustment for a history of injection drug use and sexual behaviours (4).

In a 2008 Canadian study , Shannon et al (101) reported on the HIV and HCV prevalence among crack cocaine smokers as well as dual users of crack and injection drugs. Of the 437 participants, 246 were dual users (56%) and 191 were exclusively crack smokers with no history of injection. Although HIV and HCV rates were highest among participants with a history of injection drug use, crack smokers had elevated rates HIV prevalence (19%) and HCV prevalence (43%) compared to the general

population. Interestingly, during a gendered analysis of female crack users, the rate of HCV jumped to 58%.

The Presence of Oral Sores and Risks for Disease Transmission

Both HIV and HCV infection can lead to the development of lesions or sores on the lips and in the mouth in up to 50% of infected individuals (8,146,163,164). These sores are concerning as they can create an opportunistic site for blood-borne disease transmission among individuals who smoke crack (146,163,165,166) and are of particular concern among individuals who may engage in unprotected oral sex (77), or in the sharing of crack pipes or smoking inhalation devices.

It is not uncommon for crack smokers to have burns, blisters, cuts or other injuries on or around the mouth and oral cavity as a result of smoke being inhaled through hot metal and glass devices (15,55,128,167,168). Injuries to the mouth region, as well as cuts and burns to the hands, are also a result of smoking crack with a glass stem which may become broken or splintered from repeated and ongoing use (21,168). These sores are the result of frequent and ongoing contact of the mouth and lips with hot smoke, hot glass, or metal pipe stems, steel wool often used as stem filters or the sharp edges of glass pipe stems (15,167,169,170). As a result of ongoing crack smoking partnered with a reluctance to seek medical care, many of these oral injuries remain as open sores and take longer to heal.

In 1996, Faruque and colleagues (15) reported on a study that assessed the prevalence of oral sores among people who smoke crack. First, and unsurprisingly, it was observed that individuals who smoke crack were significantly more likely to report oral sores than people who did not smoke crack. Of those who reported oral sores, more than half reported that the injuries were a result of their crack smoking. Researchers also noted that oral sores were more prevalent in participants that were interviewed during the cold, winter months suggesting that dry air and cold temperatures likely made the lips and mouth more prone to injury (15). In univariate analysis, oral sores were associated with having smoked crack in the past six months, having oral sex, and being HIV positive. In multivariate analysis, oral sores were not significantly associated with HIV infection however; oral sores were more strongly associated with HIV infection among individuals who engaged in receptive oral sex compared with those who had not (AOR=1.5; 95% CI: 1.0-2.1). (15). As such, oral sores as a result of crack smoking may also pose a risk during sexual encounters.

In 2003, Theall and colleagues (77) reported on the significance of oral sores during orogenital sex among female drug users. Although the transmission of HIV through orogenital sex is typically low (171,172), this risk may increase if either or both individuals have open oral sores. In this study, they found that many participants increased the proportion of oral sex in which they engaged, and decreased involvement in vaginal and anal sex, as a preventative strategy to decrease their risk of contracting HIV, an observation that is consistent with earlier studies (15,173). This finding is of particular importance since women in this study who smoked crack and experienced

cuts or burns on their lips were significantly more likely to test positive for HIV antibodies at baseline (77).

Finally, Perlman and colleagues (174) suggested that the oral transmission risk of HIV, but particularly HCV, may also be possible during “shot gunning,” a practice by which an individual who has just inhaled crack smoke blows the smoke vapors into the mouth of another (174). When individuals have their mouths in contact with each other, especially if there is a presence of oral lesions or burns, the risk for transmission of disease is heightened.

Virologic and Background Evidence

Emerging epidemiological evidence suggests that these oral injuries provide opportunities for the transmission of HCV and HIV through blood-to-blood contact when smoking devices are shared (26,159,175). The risk for transmission originates from the fact that the smoking equipment comes into contact with blood or other fluids from the nose and mouth and thus, when they are shared, provide a route of transmission for hepatitis C virus (HCV) and other pathogens (82). In 2002, Hermida and colleagues (176) reported on the detection of HCV RNA in the saliva of patients with HCV infection. Using a highly sensitive test, investigators were able to identify HCV RNA in 32 of 61 saliva specimens ($p < 0.001$) (52.4%). There was a statistically significant association observed between HCV RNA viral load and HCV RNA detection in saliva. Further, investigators found hemoglobin in 14 of the 61 samples (22.9%), however the presence of hemoglobin was not a significant predictor for the presence of

HCV RNA. The hepatitis C virus, in particular, has sustained infectivity in the environment, which makes the risk of sharing of drug use equipment particularly dangerous (26).

In 2008, Fischer and colleagues (177) investigated the viral presence of HCV RNA on crack paraphernalia to better understand HCV transmission risks among crack users. Investigators tested 51 pipes and crack smoking devices, only one of which tested positive for HCV RNA. With respect to the types of smoking devices used, the majority (n=32) were glass stems, 17 were makeshift pipes made of glass (such as ginseng bottles), one was made of a plastic inhaler and one was made of a cigarette tin. Approximately 60% of the pipes assessed by investigators were judged to be in “good condition” while the remaining pipes were cracked and/or broken. The single pipe that tested positive for HCV RNA was made from a glass stem and had no cracks or splinters, however its owner presented with a large sore. Based on their findings, investigators believe the presence of sores may increase the chance of HCV or HIV-infected blood contaminating smoking devices (177). They further state that HCV transmission may be influenced by the material or quality of crack-use paraphernalia used, including the use of makeshift pipes, which increase the chance of burns and sores as a result of the heat transmission properties.

Evidence for Hepatitis C Transmission via Sharing Crack Smoking Devices

The sharing of crack pipes and other crack smoking implements has been shown to be a plausible way to transmit the hepatitis C virus (8,175,177-180). As such, sharing drug-

smoking implements, such as crack pipes, may provide an explanation for the elevated HCV prevalence among crack users, with no history of injection drug use (8,26,72,159,178). In an American study of 337 drug users who had never injected drugs, HCV prevalence was 13%. During univariate analysis, HCV infection was associated with sharing a crack pipe ($p < 0.05$) (161). Among a sample of drug users in France, smoking crack in the one month prior to interview was shown in multivariate analysis to be independently associated with HCV infection (AOR=2.65; 95% CI: 1.19-5.91) (181).

In 2002, Nyamathi and colleagues (178) reported on the risk factors for HCV and found that participants who had ever smoked crack were more likely to be positive for HCV (OR=2.42; 95% CI: 1.66-3.52) compared with those who had never smoked crack. Among IDUs, smoking crack cocaine was independently associated with HCV infection, even after adjusting for injection risk behaviours. IDUs who smoked crack daily during the six month prior to interview had approximately four times greater odds of HCV infection compared with those who did not smoke crack daily during the six months prior to interview (AOR=4.31; 95% CI: 1.03-17.95).

A study of female drug users in New York City by Tortu et al, also with no history of injection drug use, found that having a history of sharing oral and intranasal noninjection drug use implements was a significant and an independent predictor of HCV infection after adjusting for other known routes of transmission (26). A strong association was observed between HIV and HCV seropositivity among the women,

which investigators suggest may indicate that HIV infection could facilitate the transmission of HCV through noninjection routes of drug use. Consistent with these findings, a 2008 study by Macias and colleagues (8) also assessed the prevalence of HCV among noninjection drug users. Investigators found that the sharing of crack inhalation equipment was strongly associated with the presence of HCV-positive antibodies. This association was not significant, however with the sharing of intranasal, or “drug snorting”, equipment.

Finally, Howe et al (182) looked at the association between drug equipment sharing and HCV infection among noninjection drug users. Investigators found that individuals who were infected with HCV were more likely to have reported previously sharing a crack pipe, even when blood or oral sores were visible on the person with whom they were sharing however, this association did not persist after the adjustment for age.

Evidence for sharing a pipe and HIV transmission

Multiple studies have identified the possibility of HIV transmission among a crack-using population as a result of crack smoking behaviours, including the risk of transmission as a result of the multi-person use of smoking devices (77,167,175,183).

Very early on, in 1993, Porter and Bonilla (167) reported on the potential risk of HIV transmission among crack smokers with burns on their lips and mouths. For this report, the investigators went into “crack houses” and observed people smoking with metal tubes, car antennas and glass pipettes. The majority of individuals smoking had

some degree of burns in the oral region and many had cuts on their lips as a result of broken glass pipes (167). Even in 1993, the participants in the Porter and Bonilla report stressed to the investigators that crack stems are frequently shared and used repeatedly and participants feared that they might be exposed to blood on the devices (167). This was one of the first studies to identify the possibility of HIV transmission risks that exist as a result of sharing crack smoking devices. Despite compelling findings from this study, it would take a few years before the research agenda in this area shifted primarily from the sexual risks of HIV transmission to the HIV transmission risks associated with pipe sharing.

Seven years later, in 2000, Ouellet and colleagues (184) reported on the incidence of HIV among out-of-treatment drug users in Chicago. During their study, they found that smoking crack cocaine was significantly associated with HIV infection among IDUs in both the univariate and multivariate analysis (AOR=2.18; 95% CI: 1.46-3.26) (184). Positive HIV serostatus was associated with crack smoking, even after controlling for injection drug use history. These findings of this study partly prompted invigorated research efforts surrounding the non-sexual transmission risks associated with crack smoking.

In 2003, Theall and colleagues (77) identified factors associated with positive HIV serostatus among women who smoke and inject drugs. They found that women who tested positive for HIV at baseline assessment were more likely to have smoked crack in a crack house or a shooting gallery in the one month prior to interview and to have

had a cut or burn on their lips due to crack cocaine use in the past year. Women who had cut or burned their lips in the previous year as a result of crack smoking were significantly more likely to be positive for HIV than those who did not ($p < 0.01$). This finding held true even after controlling for sexual behaviours including number of partners, and engagement in oral sex (77).

Most recently in 2009, DeBeck and colleagues (183) conducted an analysis of a prospective cohort study, which was carried out among injection drug users in Vancouver. For their analysis, investigators looked specifically at injection drug users who were also smoking crack cocaine. The sample involved 1048 eligible drug users who were HIV negative at enrollment and who had completed at least one follow up visit. Investigators found that over time, the prevalence of smoking crack cocaine increased among the cohort of participants. They also found that the use of crack cocaine was an independent risk factor for HIV seroconversion over time, even after adjustment for potential confounders including injection and sexual risk behaviours (183).

Reasons and Experiences of Sharing Pipes

It is imperative to develop an understanding of what would lead to the multi-person use of smoking devices in order to best develop intervention approaches. In one study conducted in Southern Brazil (146), the majority of participants reported having ever shared their own pipe or having ever used a friends' pipe. The engagement in sharing was mainly driven by fear of being arrested by police officers for having drug

paraphernalia on their person. A smaller proportion of the sample chose to share because they believed that having their own pipe may lead to increased crack use and many women in the sample were unaware of the risks associated with sharing crack smoking implements (146).

A fear of interruption is a prominent reason for sharing previously used smoking equipment. Fear of police presence or arrest has been associated with rushed drug injecting and crack smoking (185). Less conscientious routines, such as not using a rubber mouthpiece when smoking, can lead to poor health outcomes including bacterial infections and trauma to the mouth and oral cavity (186,187). Police presence and the threat of violence have been repeatedly stated as a reason for sharing among people who smoke crack (146,188). In Vancouver for example, there have been many reports of violence by police towards individuals smoking crack because of the open drug scene in the city. As a result, many crack users reported that they were rushing to use drugs and engaging in unsafe smoking practices, such as sharing glass stems. Shannon and colleagues (188) suggest that these Canadian-based findings highlight an important reason to move crack smokers out of alleys and streets and provide a safe place for people to smoke and reduce the risks associated with crack use (188).

In 2008, Canadian researchers (189) reported on the practice of sharing drugs among female sex workers and their clients in the DTES of Vancouver. Of the 198 women interviewed, more than half (59%) reported sharing drugs with clients in the past six months, with crack cocaine being the drug shared most often (54%). In multivariate

analysis, sharing drugs with clients was independently associated with both daily crack smoking (AOR=3.78; 95% CI: 1.60-8.92) and with borrowing a used crack pipe (AOR=5.73, 95% CI: 2.71-9.44). Although this study did not assess sexual risk factors, it demonstrated that drug use behaviours which often exist between sex workers and clients include the sharing of crack and crack smoking devices, possibly indicating a sub-population which may be in need of targeted health interventions.

Also in 2008, Malchy and colleagues (190) reported on the practices and perceptions of 'safer crack use' among Canadian men and women. In this sample of 97 crack users, most of the participants admitted to engaging in some form of unsafe practices, although the majority did report to using rubber mouthpieces on their glass stems to reduce the likelihood of burns. The majority of the sample (52%) experienced negative health consequences of crack smoking, particularly infections, breathing difficulties, STIs, skin conditions, cancers, and tuberculosis (190). Almost all of the participants expressed a need for harm reduction materials and were interested in future safer crack use initiatives. Among those who did report sharing a crack pipe, they were more likely to also report engaging in sex work, to have experienced burns and lesions, and having used pipes of poor quality. Investigators concluded that the lack of available harm reduction supplies provided through public health units may led to an increase of pipe and paraphernalia sharing among the participants.

2.4.4 Accessing Healthcare Among People who Smoke Crack

People who smoke crack have more difficulties accessing high-threshold programs such as drug treatment services and experience less difficulties with access to food and shelter programs that are offered by community or volunteer groups (191). Accessing higher threshold services is made difficult by high amounts of “red tape” and lack of resources and documentation (191,192). Low education levels often interfere with a clear understanding, or even acceptance, of prevention efforts (193). Many participants face discrimination from public assistance workers (191,194,195), which often means that many are less likely to return for subsequent services or test results. Fear of disapproval and fear of rejection by service providers often presents a barrier even when health services are available (194,195). Some individuals who smoke crack note the high caseworker turnover as a reason why follow-up and consistent contact with a single caseworker becomes a challenge (191).

2.4.4.1 Association between Accessing Healthcare and Risk Behaviours

Increased access to primary care and mental health services, as well as addressing housing needs are prerequisites to changing risk behaviours (196,197). Counseling services and specifically case management have been shown to lower risk behaviours and increase access to healthcare services among drug users (196). In a cross-sectional analysis of 777 HIV-positive injection drug users and crack smokers from five large cities in the United States, investigators observed that drug use and sexual risk behaviours were lowest among those who accessed and received general healthcare services (198).

Booth and colleagues (198) assessed health-related service utilization and risk behaviours among HIV-infected drug users, including crack smokers. One of the most significant findings to emerge from this study was that the use of health-related services was associated with lower risk for HIV. They found that participants who used each of the services reported fewer risk behaviours compared with those who did not use the same services. The general use of social and health services by drug users increased over the three-year span of the study, which led investigators to suggest that it may take drug users more time than non-drug users to approach and access health-related services once they have been made available (198).

2.4.4.2 Accessing Primary Care and Generalized Health Services

Drug use, and its associated stigma, have repeatedly been identified as barriers to accessing primary medical care, particularly among crack users (9,48,97,151,191). In a sample of adult drug users in rural Ohio (9), more than half of the sample reported that they were uncomfortable talking to a doctor about their drug use and two-thirds reported that they would prefer to take care of their health issues by themselves, rather than seeking medical help (9). A second study (48) evaluated the use of healthcare services by people who use crack and also found that crack use created barriers to accessing medical services. They found that women and men who smoke crack are less likely to access general medical clinics. Overall, female participants reported greater use of health services than men, although crack use was consistently a barrier for both sexes to accessing general medical care and ancillary health services (48). Comparatively, men who smoked crack were more likely to rely on emergency room

services as they are without a primary care provider (48). Investigators noted that the crack-using participants reported the least education and were by far the least likely to access health services compared with other drug users.

Similarly among drug-using women living in Saint Lucia and Trinidad, Day and colleagues (38) reported that women identified barriers to accessing care, but also faced problems with the quality of care they received. Only 20% of women reported that they had positive experiences with the health system, while 68% reported they were very reluctant to access and use the services based on a previous bad experience. One-third of the total sample reported that they were too embarrassed about their drug use to even access health services. Half of the women (50%) believed providers did not understand their addiction and that they were discriminated against as a result. Some women (40%) felt that the health system focused on abstinence and therefore, harm reduction services were not integrated. Among the women, there was a consistent belief that the treatment they received was unequal compared with the general population as a result of discrimination around their drug use, a finding which has been echoed by other investigators (48,97,151), including those from an Ontario-based study (38).

With regard to type of healthcare utilized, it has been found that active drug users are significantly less likely to have a regular health practitioner compared with those that did not use drugs (97). Individuals who use crack were significantly less likely to have a regular provider compared with other drug users (97). Overall, substance-using

participants reported low measures of health, but only active crack- and cocaine-using participants had significantly lower levels of access to health services.

Chronic drug users, in general, consume more inpatient and emergency care resources, but less outpatient services, compared to the general population (48,199), and crack smokers have been shown to have an over-reliance on emergency services (200). Women who smoke crack report very high levels of emergency-based interactions with the healthcare system, indicating a need for interventions before medical concerns escalate (38,151). In one study, the majority of women reported that if they were ill, they would go to the emergency room or hospital rather than to a family physician (38). Following that, the second largest proportion stated they would visit a community clinic, and only 10% reported they would go to a general practitioner (38).

Contrasting outcomes have been observed in Germany, where there is an increased focus on health promotion among drug users. In 2001, Verthein and colleagues (10) reported on the use of health services among people living in the open drug scene in Hamburg. Opposite to what is often seen in North American research, investigators found that almost all of the interviewed German drug users (n=616) were in contact with drug treatment services or with general practitioners. Since the study was conducted in an area that has a high proportion of low-threshold services, investigators speculate that this may be one explanation (10). However, they note that the availability of health-related services among the open drug scene have steadily been on

the rise during the previous years and that individuals not accessing health-services in this area would be among the minority.

2.4.4.3 HIV Testing among People who Smoke Crack

Based on the high risks of HIV infection among crack users, it is particularly important to facilitate HIV testing along with pre- and post-test counseling. The decreased likelihood of crack users to access primary care services also impacts their likelihood of receiving HIV testing. Similar to what is observed for accessing primary medical care, stigma from health providers is a large reason why crack users hesitate to seek out HIV testing (107,201). In Canada, it has been noted that individuals who use drugs often hesitate to access health services, including HIV and HCV testing out of fear that their drug use will lead to potential prosecution (11,24,183).

In 2005, MacMaster et al (107) looked at barriers to accessing HIV-related health services among African American women who smoke crack. Investigators found that almost all women stated that they had not used or tried to access HIV testing services. The most frequent barrier to testing was the fear of receiving a positive test. A second barrier that was mentioned by most participants was the stigma attached to HIV and the compounded stigma of also being a crack user. Women said that simply visiting an AIDS Service Organization (ASO) was often enough to create stigma and therefore visiting an ASO to receive services was often not even a consideration (107). In a study from Brazil (201), women who reported not knowing their HIV status, or who did not return for test results, did so out of fear that results of a test may lead to stigmatization. They also feared having the results of the test disclosed to healthcare workers,

researchers or acquaintances, as they believed their confidentiality would not be respected (201).

The method of delivering HIV testing services to individuals can greatly impact the degree of uptake. In 2001, Tinsman and colleagues (202) reported on factors affecting client responses to HIV testing. In this study, they found that recent crack smokers were only half as likely to access HIV testing, in comparison to nonsmokers (OR=0.53; 95% CI: 0.43-0.65). They found that the most predictive factor of a participant receiving an HIV test was the mechanisms used to deliver testing services. In particular, clients at outreach clinics with mobile units were 86 times more likely to obtain an HIV test than those at other outreach sites (OR=86.06, 95% CI: 6.40-1156.40). Further, clients who were served by clinics that had any capability for on-site testing were 21 times more likely to receive a test, compared with those who visited sites that required referral to another agency or clinic for testing (OR=21.22; 95% CI: 1.14-396.68).

In 2007, Brewer and colleagues (59) reported on high-risk behaviours among women who use crack and their knowledge of HIV serostatus and risk behaviours. In multivariate analysis, investigators found that there were no significant differences in the risk behaviours of HIV-positive and HIV-negative women with regard to the frequency of drinking, crack smoking, or drug injection. Further, the participants demonstrated no difference in terms of types of sexual partners, specific sexual behaviours, or condom-related attitudes. HIV-positive women however, were significantly less likely to actually engage in unprotected sex with partners (AOR=0.36;

95% CI: 0.13-0.99) and their engagement in unprotected sex was negatively associated with stronger beliefs about the protective nature of condoms (AOR=0.07; 95% CI: 0.01-0.67) (59). These findings are in contrast to those of a much earlier study (89), which found that HIV-infected crack smokers, both male and female, continued to engage in high-risk sex behaviours that could contribute to HIV transmission, even once knowing they were HIV positive. Findings from both studies illustrate the importance of a continuum of care among participants who receive HIV testing. Education and post-test counseling are imperative to working with clients to change their behaviours, which may place themselves and others at additional risk.

2.4.4.4 HIV Primary Care and Specialized Services

Beyond testing, there is often a gap in the transitioning of patients into appropriate HIV-related care. Following a diagnosis of HIV, approximately one-quarter to one-third of all HIV infected persons delay seeking HIV primary care, often until their disease progresses significantly and they require acute care, this proportion is even higher among the drug using population (203). Crack smokers often delay seeking treatment for STIs, including HIV, as drug use can lead individuals to be less aware and less concerned about disease symptoms and outcomes. When it comes to HIV-specific care among individuals who smoke crack, there is an even more pronounced gap in service provision. Disproportionate access to care is particularly evident among women and minority groups (204-206). Compared with male crack smokers, female crack smokers are less likely to receive treatment once HIV has been diagnosed (207-209) and less likely to receive any referrals or access to HIV-related health services (210). Once the

disease has progressed to AIDS, women are again less likely to be hospitalized or receive increased care for the disease (210).

Among crack users, high rates of HIV risk factors, and medical and psychiatric problems, are associated with a low prevalence of help-seeking behaviours and high levels of unmet health service needs for HIV infection (107). Although receiving HIV primary care has been associated with significant reductions in HIV transmission behaviour (169,211), smoking crack is associated with delayed entry into and retention in HIV primary care (49,205). Initiating HIV care is reportedly one of the most difficult things for HIV-positive crack users and initiating HIV care does not necessarily mean that individuals will remain in care, or that those who meet eligibility criteria will be eligible to receive Highly Active Antiretroviral Therapy (HAART) (192,205).

Compared with nonsubstance users, substance users have less access to ambulatory medical care for their HIV infection (199). When compared with IDUs, crack smokers are even less likely to initiate or receive HIV-related care (212). Investigators have found that crack use was a deterrent to the initiation of HIV primary care (199,212). The “frenetic pace of the crack high” combined with the lack of “a methadone-like substitute for crack” makes accessing HIV primary care particularly difficult for crack smokers. Barriers presented by crack smoking are unique compared with those experienced by IDUs and can make certain tasks, such as planning, scheduling, and organizing appointments very challenging (212)).

Between 2006 and 2007, Metsch and colleagues (213) conducted 1038 interviews in two American hospitals among individuals hospitalized for HIV complications or associated illnesses. The most prominent finding in the study was that hospitalized HIV-positive people are often not linked to HIV primary care in the community. Many HIV-positive individuals in the study primarily maintained contact with the healthcare system via the emergency room and hospitalization, which indicated a need for more specialized, primary health services in the community. Although it has been shown that provider-based interventions, carried out in the context of HIV primary care, are effective in reducing HIV transmission behaviours among HIV-positive clinic patients, there is absence of these programs and interventions made available to crack users (214,215).

2.4.4.5 Accessing Antiretroviral Therapy (ART)

Antiretroviral therapy has become highly effective in suppressing the HIV virus and slowing, or even stopping, the progression from HIV to AIDS. Standard antiretroviral therapy, which consists of a minimum of three antiretroviral drugs, has been credited with increased lifespan and quality of life among those living with HIV (216). Evidence shows that individuals who use drugs are less likely to be receiving antiretroviral therapy (ART) for HIV than people who do not use drugs. In 2005, it was reported that only 20% of people living with HCV were indicated for treatment, compared with only 8% of people actually receiving it (217).

Compared with non-substance users, individuals who use drugs have significantly decreased access to ART (192). In 2004 report based out of the United States, Cohen and colleagues reported on HIV positive women who are medically eligible, but do not take the ART regimen (192). Investigators found that women who were current users of crack were twice as likely to report not beginning ART when medically indicated, compared with women who did not use those drugs (OR=2.1, 95% CI: 1.17, 3.79). These findings are consistent with earlier studies (218-220) which also found that women using crack were less likely to begin or adhere to ART.

In general, crack cocaine use has been associated with reduced adherence to medical therapies (218,221). In one study, the most significant factor associated with nonadherence to ART was active drug use (218). Patients who had used crack cocaine were significantly less likely to adhere to the ART regimen. Compared with those who do not use crack, crack smokers are significantly less likely to adhere to the daily drug regimen, less likely to have access to a prescription for medications, and less likely to collect the ART medications (222). Crack users are more disadvantaged in terms of education and income compared with users of other drugs and nonusers, enhancing the potential for problems with adherence to ART (49). Consistent with another study (222), Metsch et al (213) found that crack smokers live a lifestyle that makes it particularly difficult for them to adhere to ART or to maintain contact with a HIV-specific service provider.

In 2004, Berg and colleagues (223) identified gender differences associated with adherence to ART. In general, participants reporting unstable housing, lack of connection to an HIV support group, active crack cocaine use, and significant medication side effects demonstrated worse adherence to ART. In a gender-stratified analysis, women demonstrated worse adherence if they reported a problem with alcohol use or active heroin use. In men, worse adherence was associated with crack cocaine use and lack of connection to an HIV support group. Also in 2004, Sharpe and colleagues (49) reported on the adherence to antiretroviral medications among African American women who use drugs. Among participants, crack smokers were far less likely to adhere to ART compared with other drug users. Due to the chaotic lifestyle associated with crack use, investigators suggest that adherence to ART is a lower priority for crack users compared to their drug seeking behaviours, making it difficult to adhere to a strict ART regimen. Investigators also found that crack use was more frequently reported among African American women than among women of other racial or ethnic groups. In multivariate analysis among Black women who were prescribed ART, women who smoked crack had significantly more difficulty adhering to the medications when compared with women who did not smoke crack (OR=0.37; 95% CI: 0.24-0.56).

Aside from individual behaviours, healthcare provider behaviours are also important to acknowledge. It has been shown that healthcare providers may be hesitant to prescribe complex drug regimens, which may cause viral resistance if not taken properly, for individuals whom they perceive may have difficulty adhering (49,224). In many

regions, there is an absence of support networks in place to facilitate drug-using individuals with accessing and adhering to their daily medication therapies (224). In another study, investigators also found that health providers were not properly utilizing the current medical guidelines for ART prescription among 42% of the women who were receiving the medications (49).

2.4.4.6 Homelessness and Crack Use

Homelessness is associated with poorer health outcomes and a decreased ability to access medical services. It has been shown that homeless adults have higher rates of chronic physical disorders compared with other adults requesting primary medical care services, as well as higher rates of skin ailments and serious respiratory problems (225). Competing needs such as finding safe shelter and food also renders accessing healthcare difficult, or can make it a low priority (225). For example, the lack of stable housing has been strongly associated with a reluctance to receive HIV testing or return for test results (226).

Approximately one-half to three-quarters of homeless adults have at one time lived with addiction to alcohol drugs and also suffer from other mental disorders (227). Due to the consuming nature of addiction, there is a bidirectional relationship that exists between drug use and homelessness. As a result, an ongoing cycle is created where homelessness leads to increased levels of drug use, and increasing drug use makes it more difficult to secure stable housing (227). Compared with drug users who do not smoke crack, people who smoke crack are much less likely to be stably or permanently housed (2,103).

In 1998, Smereck and colleagues (228) reported on the prevalence of HIV infection and risk behaviours associated with living situation and homelessness. Investigators found that crack smoking was high among individuals living on the street and was consumed in higher amounts among those who were HIV positive. They found that the odds of being HIV infected were increased significantly for homeless individuals who engage in high-risk drug using behaviours, such as smoking crack and sharing used crack smoking and injection equipment.

Tortu and colleagues (138) reported on gender differences in urban crack users with respect to health status and services. Among 1434 individuals, investigators found that men were more likely than women to report being homeless and living alone and less likely to report their primary source of income coming from a spouse, family or friends, indicating that women have more private sources of income than men. It was observed that poor, minority women had the most limited access to healthcare and often have the most difficulty accessing drug treatment. Based on findings, it may indicate that among drug users, women may have more social supports than men, an observation which has been seen in a similar study (138). Homeless women who use crack have attempted suicide more often, however they do not have more psychiatric hospitalizations than homeless men (229). Among homeless women however, social support from non-drug users has been found to be associated with more active coping, lower levels of anxiety and depression, and decreased likelihood of ongoing drug and alcohol use (230).

With respect to reaching these individuals, it has been shown that standard health prevention and treatment programs often do not effectively reach homeless women who use drugs (54). As a result, Wecshberg and colleagues (231) created a tailored intervention to reach these women. Investigators found that among female crack smokers who received a gender-focused intervention to reduce HIV risk behaviours, these women demonstrated significant reductions in homelessness and increased employment at follow-up. Compared with the control group participants who received a generalized HIV prevention intervention, the women in the tailored intervention group felt more in control of their housing situation and were more likely to report being stably housed at the follow-up assessment (231).

Another subgroup, homeless youth, commonly experience a whole host of difficulties while living on the streets (232). More than half of homeless youth have addictions to either crack or opiates and this proportion most often increases with sustained homelessness (232-234). As well, homeless youth who use drugs are often faced with multiple barriers to accessing healthcare services (225,235,236). Trusting authority, such as healthcare professionals, is often difficult for homeless youth as many have had numerous negative experiences with adults throughout their lives (225,232).

2.5 Opportunities to Reduce Harms Associated with Crack Use

After identifying major health concerns faced by crack smokers and the many barriers they encounter when accessing health services, the discussion will now shift towards options for providing intervention opportunities with this population. The third section of the systematic review will address the third research question which focuses on the available options for individuals who wish to change or reduce the harms associated with their crack smoking. In order to do so, two major opportunities for intervention will be presented: i) drug treatment programming, and ii) harm reduction initiatives. These two areas will be addressed and various options and barriers of each will be presented. This section on lessening the impacts associated with crack use will provide information on two different forms of intervention and the options currently available for both drug treatment and harm reduction. It should be noted that these two approaches are not mutually exclusive and are often most successful when provided in tandem.

2.5.1 Opportunity for Intervention: Drug Treatment

Since its primary purpose is to treat withdrawal symptoms associated with opiates such as heroin and morphine, Methadone Maintenance Therapy (MMT) is a drug substitution therapy, which serves to minimize the physical symptoms of opiate withdrawal. As such, MMT is not useful for reducing cocaine or crack use and there is currently no pharmaceutical substitution available for cocaine use. The use of crack has been associated with poorer compliance with MMT among those who are dual users of crack and opiates, which in itself can lead to poorer treatment outcomes (237,238). Crack use among those on MMT is associated with poorer psychological health and

increased incidence of crime, compared with non-crack users (237). As such, there is a need to identify the needs of crack smokers who wish to enter drug treatment, as well as viable and sustainable options to help overcome the addiction.

2.5.1.1 Specific Needs for Crack Users Entering Treatment

In 2006, Vivancos and colleagues (37) conducted a study that assessed the degree of crack cocaine use among crack users in rural England to determine the local needs for treatment services. Investigators used a questionnaire with 306 users of drug treatment services and additionally conducted focus groups with 45 crack smokers. Among this sample, investigators found that most participants felt there was currently no effective, available treatment option for crack addiction. Although clinical services were available for heroin addiction, participants identified no options for crack users (37). Participants were also critical of the existing available treatment programs. A major need identified by users was a program which would incorporate programming that would help fill time. Since crack smokers describe a life “revolving around their need to feed a habit”, participants reported a need to occupy their time, a gap which is left by their drug use. Treatment programs that incorporate training opportunities and social programming were felt to be very valuable. Finally, participants expressed a value in incorporating ex-users into treatment programs as these individuals have first-hand experience with reducing crack use (37).

2.5.5.2 Accessing Drug Treatment Programs

Participants in many studies expressed an absence of available treatment in their local area (35,37,138,191,239,240). Crack users in various countries have reported that

access to drug treatment was not available upon request. In a study assessing drug treatment among crack-using women in Puerto Rico (35) there was a high degree of unmet need in drug treatment programs. Only one-third of those seeking treatment in the past year had received such services and only one-fourth who were seeking mental health services actually received help. Among those that did enter drug treatment, more than half of the women (52%) reported that they were coerced or pressured to enter the program. Across all social services, less than one-eighth of women reported receiving the services they sought. Investigators stated that this large degree of unmet need among the sample was attributed to lack of availability of services and low levels of education reported by the women (35).

In 2005, Fischer and colleagues (240) reported on access to drug treatment among illicit drug users in five major Canadian cities. Among participants from Toronto, Montreal, Edmonton, Vancouver and Quebec City, investigators found that a substantial proportion of individuals had tried or wanted to enter some form of drug treatment during the previous year. Almost all of these participants reported that when they sought treatment, it was unavailable. The majority of participants in both the Toronto and Edmonton samples indicated they had an “ideal” form of treatment that they prefer to enter, those which met their perceived treatment needs and preferences, although they would enter any form of treatment, if it were made available. The findings in this study echo those by Deren et al (239) who investigated crack smokers in two large American cities and assessed HIV-related risk behaviours and attempts to change drug

use. The majority of participants in this study reported multiple, unsuccessful attempts to enter treatment as well as an absence of available treatment options (239).

A study based in three major American cities found that participants were able to access drug treatment however; the average wait time was approximately six months or longer (191). Although the long wait time was most often a deterrent, those that were eventually able to enroll in treatment felt that there was a lack of support system in place when they left the program, stating that they were faced with the same social and environmental pressures following treatment and didn't have aftercare supports in place. In a study of rural migrant workers who use crack, Weatherby and colleagues (47) found that recent participation in drug use treatment resulted in more, and not less, drug use. It was speculated that this was often the result of pressure from peers and social networks following treatment. While in treatment, participants became exposed to new networks of people who use drugs and many of the relationships persisted following the treatment program. A lack of coping skills to deal with these pressures was identified as a problem.

2.5.1.3 Connecting with Social and Health Services for Treatment Access

Actually gaining access to drug treatment services can be one of the more difficult aspects of a treatment program. Evidence indicates that many crack smokers prefer to access treatment from health and social service programs, such as emergency room services or self-help groups (241). Studies of low-income drug using clients of health, social service, and justice agencies finds that health and social service agencies can greatly help in facilitating entry into drug treatment (242,243). By creating these

opportunities and bridges between services, it is possible to increase the number of crack users who seek and enroll in addiction treatment. By directly providing them with health and social services and making effective referrals, it may make it possible to bridge the gap between their current situation and realistic drug treatment and may also decrease their potential for relapse following treatment (134). Participation in drug treatment has been shown to increase engagement with health and social services (244), and the concurrent provision of services has been shown to improve client outcomes in drug treatment (244).

Although MMT is used for opiate addiction, Millson and colleagues (245) published a study in 2003 that discussed the provision of MMT referrals through a local NSP. Although this is not directly related to crack use, it serves an example for creating bridges between harm reduction and health services with drug treatment. Overall, investigators found there was a lot of variability in the availability of MMT as well as in the policies around the service and noted that NSPs can serve as a point of contact for drug users. This provided access drug treatment services such as referrals, particularly for drug users who are highly marginalized. They suggested that NSPs may be able to assist clients by providing the MMT through their services, providing that they have a physician that is willing to collaborate. Among the study participants, 51% indicated that they would enter MMT if it were made immediately available to them. Investigators make the strong point that among hard-to-reach clients, NSPs have already built trust, which is essential for providing effective MMT and perhaps that relationship could be extended to include on-site primary care or MMT onsite.

2.5.1.4 Barriers to Receiving Treatment

Before an individual can benefit from substance use treatment services, they must first gain access to, and become engaged with these specialized services (107). Without an opportunity to interact with these services, individuals may be unable to overcome barriers to treatment access, may continue to use drugs and engage in high-risk behaviours. However, a variety of barriers exist which make it difficult for crack users to enter drug treatment including lack of transportation (3,107,246), lack of childcare (3,107,246), financial difficulties (3,107) and fear or shame (3,107,246).

Housing or homelessness is one of the largest barriers to treatment entry as homeless individuals, who find transportation and finances difficult, are less likely to enter or successfully complete treatment programs (107,186,247). In a controlled study of homeless drug users, 100% participants dropped out of treatment before the intervention was completed (247). Lack of housing stability and risk of losing access to shelters, were cited as reasons for not completing the drug treatment program. Evidence shows that with intensive drug treatment provided in tandem with access to housing or housing supports, homeless participants can achieve and maintain stable housing as well as substantially reduce their crack use (186). It has further been shown that successful completion of drug treatment has positive associations with housing. In one study, it was observed that having been in any drug and/or alcohol treatment program in the last six months was negatively associated with a current situation of homelessness (186).

Through interviews and focus groups conducted in 2005, MacMaster and colleagues (107) analyzed the experiences of women trying to access drug treatment services. Through these consultations, investigators identified specific barriers and fears held by women who were considering treatment. The most consistent barrier reported by all women was the wait time between requesting drug treatment and when they were actually able to access services. Other barriers included: financial issues, childcare, lack of transportation, fear and shame, homelessness, and financial concerns. Many women stated that entering drug treatment was simply not an option as they were the sole caregiver for their child(ren) and many feared losing their public housing if their drug use was exposed. Among those who eventually overcame barriers to begin treatment, fears remained omnipresent among participants. Initially, women expressed fear of the transitional phase of entering treatment and the uncertainties of what to expect and upon starting treatment and some women expressed that the program did not initially meet their expectations. Many women were fearful of an unsuccessful outcome as many had multiple, unsuccessful past treatment attempts. A fear of losing social support was reported by participants who felt that they might lose existing connections with friends who continued to engage in high levels of drug use. This study highlighted the importance of offering women a holistic approach to treatment, which would allow for the involvement of many community and social support systems.

More recently in 2007, Wechsberg and colleagues (3) reported the effectiveness of removing barriers with a pre-treatment intervention among African Americans who smoke crack. Relying on street outreach, investigators recruited 443 African American

participants who were subsequently randomized to either an intervention or control group. The intervention focused on pretreatment issues and provided participants with personalized feedback about their drug use, the treatment process, and provided them with skills to enhance responsibility and decision-making around their drug use. At a three-month follow-up assessment, participants in both groups reported significant decreases in their crack consumption. Although numbers were low in both groups, participants in the intervention group comparatively reported higher levels of treatment initiation including: phoning the treatment program, making an appointment, or entering a treatment program. Overall, the proportion of participants entering a drug treatment program was low in this study and it was clear to investigators that the main reasons included unemployment, homelessness, lack of childcare, lack of transportation, and financial concerns, as has been seen in other studies. During the study, free or subsidized treatment was not available and therefore was not offered to participants.

Compared with other drug users, crack users have lower 90-day retention rates in drug treatment. Studies have found that crack users dropped out of treatment sooner and more often compared with other drug users, even after adjusting for demographic variables (237). As crack smokers are typically less responsive to interventions, including treatment interventions, they require highly tailored programs and require intensive and ongoing treatment approaches (1). The compulsive nature of crack use makes effective prevention and intervention efforts difficult to implement (1).

2.5.1.5 Correlates for Successful Outcomes

Certain correlates have been identified as being beneficial when included in a treatment plan for crack smokers. Education, for example, has been positively identified with positive treatment outcomes including retention in treatment and decreased use of crack (248). Treatment programs that identify and focus on the inclusion of environmental barriers in the treatment plan have also been helpful in counteracting low retention rates (231). Specifically, it is believed that this can ultimately allow for the development of more specialized strategies to engage participants as well as a more tailored program, both of which are more likely to result in positive, long-term outcomes. Finally, programs that offer a combination of drug treatment with job placement opportunities have been shown to have a positive relationship between treatment outcomes, decreased drug use behaviours, and employment status (231,248).

Investigators have had some success in developing interventions targeted at decreasing crack smoking among users. Enhanced and tailored interventions are associated with significant improvements in risk associated with crack use compared with users who received a standard intervention (249). Based on the following four studies, the importance of social supports, community engagement, and customized intervention strategies are highlighted.

In 2007, Sterk and colleagues (250) reported on a woman-focused HIV risk-reduction intervention that was conducted in Atlanta, Georgia where investigators recruited 65

female drug users between 2002 and 2004. The intervention involved individually focused sessions that centered on the woman's sexual and drug behaviours, relationship to her community, and her everyday experiences. At six-month follow up, several of the women had given up crack cocaine, however this involved terminating many of their social connections as well as making large changes in their daily life. Many felt very isolated and some women joined twelve-step programs and reported higher levels of social support. Compared with those with support, those who isolated themselves were much less confident that they would be able to avoid crack use in the future. Although many women were unable to abstain completely, most were reporting less frequent crack use and as a result, described new social connections within the community. Women who were unable to quit or decrease their usage, did report smoking in public less often, which therefore led to lower levels of stigmatization. These findings are consistent with a similar study conducted by Wechsberg et al in 2004 (231) which found that out-of-treatment African American women who use crack and are at high risk for acquiring HIV who receive a standard or tailored educational and skill-building intervention made significant reductions in crack use at three ($p<0.001$) and six months ($p<0.001$).

The need for ongoing support and the potential loss of social connections presents barriers to initiating treatment among crack users. In one study, 22% of interviewed crack smokers said that "no one" would be available to help them if they tried to quit drugs and the sense of isolation would be significant enough to prevent them from beginning a treatment program (39).

In 2008, Schlosser and colleagues (109) reported on an intervention assessing readiness to change, which was delivered to 923 crack smokers in Missouri. Participants were randomized to receive either a standard HIV education intervention, or an enhanced, peer-delivered intervention. From baseline to the three-month follow up, two-thirds (66%) of participants reduced their crack use by either stopping altogether or by reducing to a low level of use. Over time, participants that received the enhanced intervention were more likely to decrease their crack use. Between men and women, there were no significant differences in crack use, regardless of intervention status. Finally, investigators found that older participants were more likely to decrease their crack use by follow up, in comparison to younger participants.

Also in 2008, Okpaku and colleagues (108) reported on a model for increasing culturally relevant treatment access for African American women who smoke crack and who were at risk of contracting HIV. The model for approaching drug treatment was based on the premise that drug users have complex needs and require comprehensive, holistic services to support many areas of their lives. The goal of the program was to create a stronger network of HIV prevention and treatment services within the community (including harm reduction, housing, and health services) and to increase the availability of these services to vulnerable women. Starting with outreach support, potentially interested women were then offered pretreatment planning support, followed by case management sessions and finally an appropriate treatment program. After two years of this program, the research team had successfully engaged 78 women

for the full course of the program. All participants reported that after being approached by street outreach, they engaged with the treatment on their own accord and were not coerced by the legal system or an employer (95). Investigators stated that the model was successful in this particular community as a result of the culturally sensitive approaches and the transitioning of clients from low- to high-threshold services with appropriate and holistic support.

Most recently, in 2009, Weeks and colleagues (251) reported on an intervention that was done in Hartford, Connecticut entitled the “Risk Avoidance Partnership.” The program was developed to train active drug users to become peer health advocates in their community. The objective of the intervention was not only to train peer educators, but to allow peers to develop an awareness of their personal risk behaviours. Following the program, approximately one-fifth of the peers (21.3%) reported having entered a drug treatment program during the time they were acting as a peer educator. There was also a significant reduction in the number of participants who reported injection drug use, syringe sharing, crack use, cocaine use, sexual risks behaviours and an increase in rubber mouthpiece use among crack users. Further, investigators observed a reduction in the frequency of behaviours including drug and sex incidents such as the number of unprotected sexual encounters, decreases in frequency of sharing injection equipment, and injection and crack smoking rates. These outcomes demonstrates the peers had substantial interest in reducing their own personal drug use and was indicative that the peer educator role was often a catalyst for a drug user to want to make positive changes in their own drug use behaviours.

Based on findings from the published literature, there appear to be two primary reasons why drug treatment programs are typically ineffective at decreasing crack use among smokers. First, people who smoke crack have poor access to treatment services, either because they are not locally available or because they do not have the means of obtaining an appropriate referral. Second, the nature of crack use makes entering a treatment program difficult. Many crack users lack housing and social supports, therefore do not feel they have the stability necessary to undertake treatment. The nature of crack addiction leads to a very chaotic lifestyle, which makes adhering to a strict drug treatment program particularly difficult.

2.5.2 Opportunity for Intervention: Harm Reduction

This section will focus on the role of harm reduction for providing an opportunity for intervention among individuals who smoke crack. Following an overview of the principles of harm reduction, two different types of crack-specific harm reduction will be discussed: the provision and distribution of safer inhalation materials and implementation of Supervised Consumption Facilities (SCFs).

2.5.2.1 History and Principles of Harm Reduction

Harm reduction refers to the policies and programming which exist in order to reduce the harms associated with the use of drugs among individuals who are “unable or unwilling to stop” and has the objective of minimizing the adverse health, social and economic consequences involved with using illegal psychoactive drugs (24). Having roots in both public health and human rights, the principle of harm reduction is a response to drug use that aims to benefit not only drug users but also their families and the greater community (24,25). Although it may be considered ideal to assist individuals through drug treatment programs, the harm reduction framework is based on the reality that many individuals are unable or unwilling to access treatment for their drug use (24). Further, those that are willing to receive treatment often are faced with extremely long wait times or a lack of locally available treatment options.

Although different methods of harm reduction have historically been used for a wide range of drugs, this approach became most frequently utilized when the HIV transmission risks among injection drug users was first identified (24). Through sharing needles and other pieces of injection equipment, individuals have blood-to-

blood contact with other people and therefore put themselves at risk for contracting diseases such as HIV and HCV.

The current estimate of the International Harm Reduction Association is that individuals are currently injecting drugs in 158 countries and territories worldwide (25). As of March 2009, harm reduction policies and/or programming had been adopted in more than half of those regions. Of the 158 regions, 93 of them support harm reduction initiatives through either national policy documents (n=79) or through the implementation of harm reduction interventions (n=82) (11,25). Globally, 82 countries have NSPs and eight have drug consumption rooms for the safer injection or inhalation of drugs (25).

Needle and Syringe Programs (NSPs) are perhaps the most well known example of harm reduction programming with their emphasis on decreasing the risks of disease transmission associated with injection drug use. By providing sterile syringes and injection preparation equipment, individuals that use drugs can lessen the risk of blood-to-blood contact by having clean, unused pieces of injection equipment (24). Although harm reduction has been typically associated with injection drug use, harm reduction materials also exist for individuals who smoke drugs, particularly crack.

Harm reduction programming has historically been controversial and has been met with resistance. Even though it has proven to be a successful and cost-effective measure to decrease risk, many countries, such as the United States, have even had

difficulty maintaining the funding for NSPs (11,25). Comparatively, many countries in Western Europe have demonstrated a very progressive response to drug use. Several countries in this region utilize harm reduction initiatives such as establishing supervised drug consumption facilities, syringe vending machines, injectable opioid substitution therapy (OST), and regulated heroin prescription programs (11,25).

2.5.2.2 Safer Crack Use Kits

Concerns about the potential transmission of HIV and HCV via shared crack smoking devices have prompted some Canadian and international cities to introduce harm reduction initiatives specifically for people who smoke crack (25). Epidemiologic evidence supports the distribution of safer crack smoking materials as a harm reduction measure, which is comparable to the distribution of syringes and injection preparation materials (217). Safer crack smoking kits are often small packages which often include an unused glass stem for smoking the drugs, clean brass screens to act as a filter and prevent accidental inhalation of drug particles, a rubber mouthpiece to place on the stem in which to prevent burns and blisters, and lip balm to prevent or soothe injuries to the lips. Materials to reduce sexual-related risks, such as condoms and packages of lubricant, may also be made available. Many programs elect to distribute individual pieces of the kit rather than the whole package as some individuals prefer to collect one or some pieces, rather than all of them (217).

Distribution of these harm reduction supplies has a two-fold purpose. First, the physical distribution of supplies provides individuals with clean, unused pieces of equipment, which decreases the risk of sharing and therefore disease transmission, and also

provides quality materials which eliminate the need for users to create makeshift, poorer quality smoking devices. Second, the distribution of supplies provides an opportunity for interaction between the drug user and a healthcare provider. When supplies are distributed from a health service location this is most often done by a nurse or nurse practitioner, which allows for a short conversation about health concerns or allows for a brief intervention conversation (25).

2.5.2.3 Supervised Consumption Facilities

Although a variety of terms are used, generally a Supervised Consumption Facility (SCF) generally refers to health facilities, which allow for the consumption of drugs, either by injecting or smoking, in a sanctioned and supervised location. A Safer Injection Facility (SIF) often refers to a place where drug use is exclusively by injection and a Safer Smoking Facility (SSF) refers to a place that permits the smoking of drugs and most often allows for injection in a separate area. SSFs are more rare and have a more difficult time receiving exemption from federal legislation, which has been the situation in Canada (25). SCFs in Europe have had success with the implementation and sustainment of smoking-only areas through careful evaluation and the incorporation of advanced ventilation systems (252).

Supervised Consumption Facilities (SCFs) are legally sanctioned facilities, with a low-threshold approach, which allow for the hygienic consumption of pre-obtained drugs by clients (253,254). Within a SCF, individuals are permitted to consume drugs in a non-judgmental, anxiety-free atmosphere (253,254). Clients can smoke or inject their

drugs under the supervision of medical staff that are appropriately trained to respond to drug-related health events, such as drug-induced overdoses (255).

These sanctioned facilities are distinctly different from unregulated “shooting galleries” where the owner of the residence or building operates to generate a profit from users. A shooting gallery is a non-sanctioned room or building, which may be operated by a tenant or well-known drug user. Shooting galleries are typically not affiliated with public health initiatives and most often do not provide individuals with new and unused drug preparation equipment. Des Jarlais (140) stated that a shooting gallery may function as a “structural facilitator” for the transmission of disease, as individuals have an increased risk of coming into contact with previously used needles and syringes (140). Before NSPs were implemented, shooting galleries were often the main source for an individual to obtain syringes, whether they were new or previously (58). Unlike SCFs, shooting galleries may pay little attention to the health or safety of individuals using the location (17,256,257). Crack houses, which are similar to shooting galleries, exist for those who smoke crack, and operate much like shooting galleries. Crack houses most often do not offer unused smoking supplies or other harm reduction materials. Smoking crack in crack houses has been shown to greatly increase the likelihood of the transmission of HIV and HCV (133).

Among sanctioned SCFs, each supervised site operates slightly differently, yet the materials and services provided are similar. While visiting SIFs, individuals are provided with clean injection and drug preparation equipment including sterile water

for mixing the drugs, an acidifier for breaking down the drugs, a clean metal cooker for heating the drugs, a clean tourniquet to tie off the vein, alcohol swabs for cleaning skin, and a sterile syringe for injecting. While visiting SSFs, individuals are provided with clean smoking equipment that was previously explained.

The primary objectives of a SCF are as follows: to act as a point of contact to relevant health and community resources, to reduce adverse health events associated with drug use, to decrease public drug use, to decrease publically discarded drug use equipment, to decrease the transmission of blood-borne viruses, to reduce overdose and the mortality associated with drug use, to reduce sharing of drug use equipment and to increase recruitment into drug addiction treatment (163,253,254). One of the main purposes of originally opening consumption facilities was to initiate contact among a very marginalized and hard to reach sub-population of drug users and to create a medium to provide health promotional education (254).

SCFs are often effectively used as a mode of connecting drugs users with local health or social services, such as primary care services, harm reduction services, drug addiction treatment or housing and job services (255). Establishing connections between clients and health and social services, is a primary objective of a consumption facility, since a SCF provides a safe and private space where individuals can learn about available services.

Supervised Consumption Facilities provide the opportunity to educate clients about health promotion and health-related messages. Nurses and frontline staff educate individuals about safer forms of drug preparation and consumption, help identify risk situations, educate on personal hygiene and hand washing, and educate on how to properly use sterile inhalation and injection materials, which are provided by the facility (254). Some locations have led tutorials and workshops with clients with a hands-on teaching approach for proper drug use methods, such as how to correctly insert brass filters into a glass pipe or how to properly tie a tourniquet (254).

The staff working in consumption facilities consists mainly of social workers, outreach workers, psychologists, nurses and medical officers (126). Staff members are usually scheduled on a rotating basis and there is minimum of one staff member supervising clients in the consumption room at all times (258). Some sites employ individuals who are former drug users because they are personally familiar with the challenges and risks associated with injecting or smoking drugs (254,258). Peers are able to provide unique perspective and advice to current users, which medically trained staff may simply be unable.

Professional staff at these facilities report having a deeper understanding of addiction, drug use patterns, and the lifestyle challenges faced by their clients (254). Staff report that the higher level of client engagement facilitates more conversations about drug use and provides increased opportunities for health education for clients (254). Many facilities allow staff to participate in tutorials and workshops on topics, which have

local importance to clients, which allows them to provide clients with correct and useful information.

Depending on each site, there are different requirements and restrictions for participants. To use the services, individuals must be active drug users and most often must be at least 18 years of age (254). For sites where clients would use opiates, there is often a requirement that clients are not currently on drug substitution therapy, such as Methadone Maintenance Therapy (254). SCFs often maintain a strict set of regulations to be abided by all participants during their stay. Violence and drug dealing are prohibited by most, if not all, facilities and engaging in those behaviours may result in a ban from the location. Sharing drugs or drug using equipment is often prohibited and clients are monitored by the staff supervising the consumption areas (254). Many facilities impose a limit on time spent in the smoking or injecting rooms to ensure there are sufficient openings for all clients. Consumption rooms will often have a “chill room” which provides clients the space to relax or spend time during their high if they prefer to not leave the facility immediately. It is often in this space where clients are informed of other health or social services provided at or near the facility.

Due to the close proximity of medical staff, SCFs have the potential to decrease mortality by preventing or quickly responding to drug overdoses. By having nurses onsite who supervise clients, this allows for an immediate medical response. Although fatal overdoses are most commonly experienced with injection, the risk of non-fatal overdose is still prevalent by individuals who smoke crack (259).

In 2003, Kimber and colleagues (253) published compelling evidence on the effectiveness of Supervised Consumption Facilities in Germany that provide space for smoking crack. Investigators conducted an evaluation of related health outcomes over seven years compiling from data from SCFs in four different German cities. In the report, the authors noted a statistically significant decrease in drug-related deaths over the course of the seven-year period. Investigators stated that these outcomes must be applied cautiously to other cities based on local drug use patterns, but overall state confidently that the presence of the SCFs was responsible for the decrease in drug-related mortality in Germany (253). Frankfurt, for example, has stated that their drug consumptions rooms, paired with additional harm reduction measures, have led to a significant decrease in the number of drug-related deaths in the city (254).

Through evaluations of drug consumptions rooms internationally, it has been shown that individuals who use drugs in sanctioned, supervised areas are significantly less likely to smoke or inject with previously used equipment (260). Not only are there sufficient clean supplies available but individuals can inject or smoke without feeling rushed or fearful of arrest by police (188,261). In the context of public drug use, many individuals report feeling rushed to consume their drugs to avoid suspicion or detection by police. Many individuals report that their drug equipment is often confiscated or broken by police. While rushing to smoke the drugs, there is an increased likelihood of suffering burns or blisters from the hot smoke or makeshift smoking device (188). Furthermore Brillo, which may be used in place of the

recommended brass screens, is more likely to break up and accidentally be inhaled by an individual if the smoking process is rushed, resulting in burns to both the oral cavity and the esophageal lining (15,188).

Although most findings associated with the opening of a consumption facility have led to more favourable outcomes, not all observe a decrease in drug use among participants. In 2003, researchers from the Netherlands published a report on four of the six SCFs in Rotterdam, Holland. Investigators found that 59% of participants in their study reported that visiting the drug consumption room did not have any effect on the amount of drugs they used and 11 of the 63 participants reported that they smoked or injected more frequently (252). However, investigators did note some positive outcomes including: reduced public drug use, improved hygiene, more attention to their physical condition, improved nutrition, longer and better quality sleep at night, and increased use local health and social services, such as shelters and housing services (252).

Supervised Consumption Facilities offer the opportunity to partner police enforcement with public health initiatives, so police can direct crack users to a facility where medical supervision and primary health services are available. This has been particularly successful in Vancouver, Canada as well as many European cities (252,261). In a study published in 2003, van der Poel and colleagues (252) conducted an explorative review of drug consumption rooms, which allowed the smoking of crack cocaine. When interviewing study participants, individuals who smoked crack cocaine felt that the

provision of a safe, secure place for their drug use was invaluable (252). Clients liked that drugs can “quietly be used inside the facility” and that they felt safe inside as they “can smoke there without getting caught” (252).

Although harm reduction programming for crack smokers is often limited, that which exists often strive to discourage the transition from crack smoking to drug injecting. By providing crack smokers with adequate materials and services, agencies aim to discourage drug users from adopting injection behaviours. From an evaluation which was conducted to assess Safer Consumption Facilities, investigators concluded that the provision of a Safer Smoking Facility (SSF) may delay or prevent the transition from smoking to injecting drugs through prevention-transition programming (262). In a 2003 report by Fuller and colleagues, their study found that approximately 85% of their participants reported noninjecting drug use prior to injection uptake (263). As a result of this common transition, Vlahov and colleagues recommended that the Canadian infection risk hierarchy should be updated to include the importance of preventing the transition to drug use (264).

In 2003, Kimber and colleagues published a report, which outlined the demographics of individuals using drug consumption facilities in Germany (253). Investigators found that overall, the majority of SCF clients are male, older, and are long-term poly drug users. They also found that although heroin was the drug most frequently consumed at the time of interview, cocaine was common and was increasing in usage. In a similar study conducted in Canada, investigators found that those most willing to use a SCF

were being female, living in a area with a high HIV-prevalence, working in the sex trade, having shared a crack pipe in the previous six months, and having binged on crack in the previous six months (163).

In cities and neighborhoods where drug use is prevalent, there are often consequences to not only those who use drugs, but those who live in the surrounding community. There are three general “impacts” which were most often assessed in evaluations of SCFs: public drug use, discarded drug use equipment, and public safety. Based on the following evaluations, the impact on the community following the implementation of a consumption facility has been positive.

Public drug use is a large concern for individuals and families living in an area where drug use is prevalent. A visible drug scene is believed to decrease the value of homes in a neighborhood, decrease clientele to surrounding businesses, and lead to more public disorder such as violence and police involvement. Among evaluations that have been completed of existing facilities, one of the most consistent outcomes found is the decrease in public drug use (252,253,255,256,265). Investigators of these studies stated that a decrease in public use was noticed by the police, service workers, and by members of the community who were previously upset with the level of public drug use. In Frankfurt, for example, it was reported that the number of complaints from neighbourhood residents reporting public drug use decreased significantly following the implementation of the SCF (254).

Another concern of public drug use is publically discarded crack pipes, syringes, and drug preparation materials. Particularly, communities are most concerned about discarded glass stems and syringes and the associated risk of blood-borne virus transmission. Of the evaluations that were included within this review, a large proportion reported a decrease in the number of discarded syringes in public locations. Investigators consistently reported that in areas where a SIF had been introduced, there was a reduction in the number of syringes that were left in streets, alleys and other public locations (252,253,255,265) resulting in safer neighborhood conditions and decreased municipal clean up costs.

A third area of concern affecting communities with drug use is the level of public safety, the presence of drug dealers, and public intoxication. In Vancouver, for example, researchers observed significant declines in all of the above areas of public disorder following the implementation of Insite (188). Internationally, researchers have also observed less violence and confrontations in neighbourhoods, a marked reduction in the presence of drug dealers, and a reduction in public intoxication (163,253,255,256,265).

Although these public concerns are reduced due to a consumption facility, stating that they completely disappear in all municipalities would be incorrect. Often, cities that implement a consumption facility experience a centralizing effect, whereby drug dealers, violence, and public intoxication are present, but to a lesser degree, in the immediate areas surround the facilities (72,188,261).

2.6 The Canadian Response to Crack Cocaine

The fourth section of the systematic review will address the fourth research question which focuses on the crack-specific harm reduction strategies that have been utilized in Canada. For this section, two major Canadian cities will be addressed and their respective harm reduction initiatives will be presented. In this section, the majority of the findings will address crack-specific programming however, attention will be paid to a harm reduction initiative in Vancouver which is primarily intended for injection drug use. The decision to focus on only two Canadian cities in this section was due to availability of evidence and based on the fact that the majority of published Canadian literature on this topic emerged from Ottawa and Vancouver. This section of the systematic review is intended to provide the Canadian context on this issue and identify specific challenges which have arisen.

2.6.1 Crack-specific Harm Reduction Programming in Canada

In 2006, Fischer and colleagues (2) reported on crack use across Canada, with focus on Vancouver, Edmonton, Toronto, Montreal and Quebec City. Investigators observed that crack use seems to vary great between Canadian cities although it was present and commonly used in all five cities. They observed that in comparison to non-crack users, those who smoked crack had a stronger involvement in drug dealing, sex work, or illegal activities for income generation. Based on their findings, researchers concluded that there is a need among urban crack users for locally appropriate and comprehensive harm reduction and treatment initiatives across Canada.

As of 2007, the Canadian provincial ministries of health in all ten provinces and all three territories were supporting NSPs (11). Federal support for harm reduction in Canada however, is not always as promising. In recent years, the Canadian federal Conservative government has largely shifted policy away from a public health informed perspective and towards enforcement oriented drug policies (25,266). Canada's previous national drug strategy included harm reduction as one of its four pillars yet the current Conservative government has not been as inclusive of harm reduction programming (266). The current National Anti-Drug Strategy policy is a shift away from a harm reduction, preventative approach and now has a strong emphasis on enforcement and punishment.

Safer crack kits were initially distributed in Toronto in the late 1990s as a health outreach tool for HIV and HCV prevention (11). After initially introducing the safer crack kits, Canada received criticism from the International Narcotics Control Board for distributing paraphernalia for smoking crack. Despite this criticism, safer crack kits began being distributed in many other Canadian cities including Ottawa, Halifax, Vancouver, Winnipeg, and Montreal and then in many smaller cities over the following twenty years (11). Many cities faced resistance from their communities and local municipal or provincial governments. The controversy arising from the distribution has been sufficient for temporarily or permanently halting the program in many of these locations. Across Ontario, people who smoke crack may be able to access safer smoking supplies from a local Aids Service Organization, a public health unit, or a partnered

community agency, though rarely would more than one of these venues distribute in any given municipality.

Although there are many Canadian cities that have faced success and challenges with the implementation of such programming, the history of two major Canadian cities are more common in the literature and are the focus of published articles, which are included in this systematic review. As such, the crack-specific harm reduction experiences of Ottawa, Ontario and Vancouver, British Columbia will be discussed.

2.6.1.1 Crack Cocaine and Ottawa, Ontario

In 2005, the Ottawa Public Health Unit implemented a Safer Crack Use Initiative in response to the increasing rates of crack use in the city (28). In 2007, after two successful years of programming, the city of Ottawa retracted their support which put the crack pipe distribution program in jeopardy (28). In December of 2007, the Ontario Ministry of Health and Long-Term Care responded by committing to providing the program with funding in order to maintain the crack pipe distribution program in Ottawa.

An independent outcome evaluation of the same program was conducted with more than 500 men and women in Ottawa who smoke crack (21,22). In 2008, Leonard and colleagues (21) reported on an evaluation of the Safer Crack Use Initiative in Ottawa. In the one-month post-implementation follow-up, more than three-quarters (80%) of crack-smoking IDUs who were interviewed had accessed the program. This proportion was even higher (87%) at the one-year post-implementation mark. An even larger

proportion of the sample (94%), reported either personally accessing the program or having a friend or partner access the services on their behalf (21). Among crack smokers who continued to share their smoking equipment, and who had personally accessed the program, the degree of sharing had significantly declined over the one-year evaluation of the program. With respect to preference of collected materials, the collection of single pieces of equipment was reported most often, rather than the collection of complete safer crack smoking kits. Investigators in Ottawa observed that participants who were both injecting drugs and smoking crack, were often transitioning towards crack smoking exclusively and decreasing the frequency of their injection behaviours. This transition was accounted for as a result of the availability of safer crack use equipment, but primarily as a result of the increased availability of crack in Ottawa.

Further, the Ottawa-based evaluation found that providing this service resulted in more than 4000 contacts between individuals who smoke crack and many community resources, which enabled individuals to have better management of their health (22). As a result of the findings from this study, the Ontario Hepatitis C Task Force made the official recommendation to the Ontario Minister of Health to “expand access to harm reduction tools, including safer inhalation equipment and educational materials, for people who use drugs” (22).

Currently, the Safer Inhalation Program exists in Ottawa where individuals can access harm reduction supplies and interact with health professionals. This program is

currently based out of local Community Health Centres, which are funded in part by the Ontario Ministry of Health and Long-Term Care, rather than the municipally funded Ottawa Public Health, which previously housed the program.

2.6.1.2 Crack Cocaine and Vancouver, British Columbia

In the Downtown Eastside (DTES) of Vancouver, harm reduction programming has primarily focused on injection drug use in the past and the reduction of blood-borne infections, including HIV and HCV. For some time, there was a gap in availability of crack-related harm reduction programming and services (267). In 2002, Vancouver-based researchers found that a high proportion of the sample reported sharing crack pipes, primarily because it was faster and felt safer. Many felt that it was time consuming for each person to use new equipment and was considered a safety concern related to police violence and fear of arrest. Participants stated that they were more likely to share if their personal equipment was difficult to use or difficult to obtain (267).

In 2004, a project was introduced in Vancouver to develop a better understanding of the harms associated with crack smoking and to assess the costs and efficacy of introducing harm reduction initiatives (268). The research team partnered with the community to introduce SCORE, which was the Safer Crack Use, Outreach, Research and Education project. Through the project, they distributed safer crack use kits, which contained various harm reduction materials for crack smokers. Kits were delivered by peers through an existing mobile outreach van who did not only distribute materials

but also demonstrated the proper methods for inserting brass screens into the glass stems and attaching the mouthpiece.

In 2008, Boyd and colleagues (267) reported on the evaluation of these kits based on 27 interviews with individuals who had received the kits. Based on the interviews, researchers found that for the most part, participants were using the safer crack smoking materials, if and when they were available. When available, they were the first choice of materials to use, but when they were unavailable, participants admitted to relying on makeshift and previously used equipment. Investigators observed that participants learned about safer practices most often through informal conversations with other crack users. This was particularly true among individuals with lower literacy levels who were unable to read the information card that was distributed along with the kits. Although some users expressed a reluctance to change their behaviours and habits for the most part, clients were receptive to the materials and appreciated having their personal equipment. Investigators believed that one of the largest benefits of the program was enabling contact between health providers and crack smokers, who are typically marginalized and have little contact with the health system (267).

The surge of crack usage in the past decade has been associated with heightened violence and human rights violations, especially the exploitation of many women who smoke crack (6).

2.6.1.3 Insite: Supervised Injection Facility

North America's first and only supervised injection facility (SIF), Insite, was established in Vancouver in September 2003 (188). In response to health-related risks among injection drug users in Vancouver, multiple harm reduction measures were implemented in the city to respond to the need for a more comprehensive response. The facility is the first of its kind to open in Canada and to receive an exemption from Health Canada legislation in order to pilot the services (269). Even though there have been positive and encouraging outcomes associated with the implementation of Insite, it has continually been scrutinized and at risk of closure due to the nature of the legislative exemptions.

There is evidence showing that Insite has been effective in reducing public injection drug use and injection-related litter in the neighbourhood (163,262). An evaluation of Insite showed that there was high uptake of the facility, improved public order (255) and a positive impact on reducing the sharing of previously used syringes and injection-related materials (188,260). Amidst these positive changes, the large open drug scene in Vancouver has persisted, which is likely indicative of the high rates of non-injection drug use, particularly crack smoking (188,255).

During an evaluation conducted in Vancouver, a decrease of public drug use has been attributed to the opening of Insite (188). In related studies, investigators found that the opening of Insite has been significantly associated with improving public order (255), decreasing the sharing of previously used injection equipment (261), and decreasing

the number of syringes discarded in public locations. In Europe and Australia where the vast majority of SCFs exist, investigators in those regions have had similar findings (9,253).

Although crack cocaine smoking is a pervasive problem in Vancouver and throughout Canada, there are no facilities in Canada, which provide a safe, sanctioned location where individuals can smoke crack cocaine. Originally, a safer crack smoking room was planned for the Insite project however it has not been utilized to date, as legislation exemption for this area has not been provided (270). Currently, advocates and policy makers in Vancouver, are calling for a Supervised Consumption Facility which would permit the smoking of pre-obtained non-injection drugs, particularly crack cocaine (188).

To work towards the implementation of such a facility, it is imperative for Public Health officials to understand the willingness of local individuals to use such a facility if a drug consumption site is under consideration. Taking notice of the high level of unmet health service needs among crack smokers, Collins and colleagues (163) conducted a study among Vancouver drug users to assess the willingness to use a Safer Smoking Facility to determine need for a site. Overall, it was shown that participants who were at the greatest risk of HIV and HCV infection indicated a willingness to use SSFs. In this study, investigators found that the variables which were positively associated with a willingness to attend a safer smoking facility included: being female, living in a area with a high HIV-prevalence, working in the sex trade, having shared a crack pipe in the

previous six months, and having binged on crack in the previous six months. The variables that were most statistically significant were having shared a crack pipe (AOR=1.64; 95% CI: 1.02-2.64)(163). These are the same variables have been recently identified as leading to an increased risk in the transmission of blood-borne infections, as well as limited access to health services. Investigators concluded that crack users would likely benefit greatly from the provision of primary services available at a SSF, particularly the provision of clean smoking supplies and a secure indoor location (163).

Shannon and colleagues (188) similarly conducted a study in the DTES of Vancouver, where they assessed potential community and public health impacts of implementing a supervised smoking facility. Within their sample of 437 participants, 303 (69%) expressed a willingness to use such a facility if one was available. Within the multivariate analysis, the variables which were significantly associated with a willingness to attend a SSF included recent injection drug use (OR=1.72; 95% CI: 1.09-2.70), having equipment taken or broken by police (OR=1.96; 95% CI: 1.24-2.85), crack bingeing (OR=2.16; 95% CI: 1.39-3.12), having recently smoked crack in public places (OR=2.48; 95% CI: 1.65-3.27), having recently borrowed a crack pipe (OR=2.50; 95% CI: 1.86-3.40), and having inhaled Brillo or experiencing burns due to hurriedly smoking in a public place (OR=4.37; 95% CI: 2.71-8.64) (188).

2.7 Brief Summary of Findings from the Systematic Review

From the evidence presented in this systematic review, the four research questions associated with this project objective have been addressed. First, a profile was developed of individuals who smoke crack by presenting information on traits and behavioral characteristics commonly observed among this population. Second, the risks associated with crack use were identified, particularly those relating to sexual behaviours, such as engagement in sex work, as well as challenges and difficulties in seeking healthcare when trying to respond to these risks and health concerns. As well, epidemiological evidence was presented which highlights the possibility for HIV and HCV transmission to occur via sharing crack smoking implements. Third, two opportunities were presented to reduce harms associated with smoking crack, drug treatment programming and crack-specific harm reduction. Finally, a brief presentation of Canadian evidence provided a snapshot look at the challenges and successes arising from crack-specific harm reduction in Canada.

2.8 Explanation of Next Steps

With the findings, direction, and context from the systematic review, it is now possible to address the second research objective for this thesis project: to conduct qualitative data collection which seeks to explore the healthcare, drug treatment, and harm reduction experiences of women and men in Ottawa who smoke crack cocaine. Based on the available published literature, there is a gap in evidence for this population in Ontario, particularly a gap in experiential evidence. According to Green and Britten (271), the use of qualitative methods can generate new evidence which helps to bridge the gap between scientific evidence and existing clinical and community practice (271). Qualitative methodology was deemed to be most appropriate for this topic area which has scientific and epidemiological evidence demonstrating risks faced by this population. There are also community-level initiatives which have been implemented in some regions across Canada, but with mixed success.

As we have seen in this review, there exists a polarization within Canada between the scientific evidence and the implementation of responsive programming. Within this topic area, scientific and epidemiological evidence has not been properly relied upon to inform public health decision-making. The disconnect between scientific evidence and current practice in Canada is the result of health programming decisions made on the basis of political ideology, particularly in Ottawa. Based on the evidence that was provided in the systematic review from Ottawa, it can be seen that this is clearly an issue where political ideology is jeopardizing health outcomes and impacting the ability to prevent disease transmission among a vulnerable and marginalized

population. It is this disconnect between evidence and practice which garners a need for investigation among the population most affected and to do so in an exploratory, manner. The qualitative approach will allow for a focus on personal experiences rather than quantitative, numerical outcomes. This approach to data collection will permit the emergence of themes and perspectives which may not be previously identified in the published literature. Through these discussions, it will be possible to better understand the impact on a population when programming is based not on evidence, but on political ideology.

3.0 QUALITATIVE DATA COLLECTION

3.1 Methodology

3.1.1 Study Design

The second phase of this research project explores the perspectives and lived experiences of individuals who smoke crack cocaine and live in Ottawa, Ontario. A qualitative approach was chosen as the most effective method in order to capture the stories of these individuals and their personal healthcare experiences. Qualitative methods are considered useful for topics which are exploratory and perhaps not otherwise considered in clinical epidemiology research (271). The nature of qualitative methodology provides the ability to systematically pursue research questions which are not easily answered through experimental methods (271). For these reasons, a qualitative approach was deemed both appropriate and necessary to explore this specific topic.

From the outset, the interview process was designed to be both iterative and evolving to allow for the inclusion of new discussion topics within interviews as participants identified them as important, a hallmark feature of qualitative research (272,273). The themes and discussion points guiding the interviews were informed by the findings of the systematic review, which highlighted important areas in need of exploration at an individual level within a local context. Interviews were conducted with the objective of discussing those topics identified to be of particular importance in the literature, especially among Canadian harm reduction publications which were identified during the systematic review.

Interviews were semi-structured in nature to allow for open discussion and permit the re-focusing of conversation, should it veer too far from topic. As responses varied among participants, this semi-structured approach allowed for the investigation of new themes or ideas as they emerged across the various demographics (271,273). Importantly, this approach allowed for the emergence of additional topics which were previously unidentified in the literature.

The decision to conduct qualitative interviews was difficult, as my prior academic and professional experiences have focused mainly on quantitative skills. However, the need to approach this topic with a more “open lens” and allow for greater exploration at the individual-level was identified as paramount. The choice of conducting one-on-one qualitative conversations rather than focus groups discussions was made for two reasons. First, the sensitive nature of the topic and the preference for some individuals to prefer not to share their crack-using experiences with their peers made individual interviews more appropriate (107). Second, it was anticipated that one-on-one conversations would allow for the divulging of more in-depth experiences from participants, compared with what may be yielded from focus group conversations. The comfort level of participants was also anticipated to be higher in these individualized settings.

3.1.2 Sample Size

As indicated in the research proposal for this project, it was not possible to definitively indicate the final sample size at the outset of the process. The sample size evolved on the basis of the findings from each interview, which is one of the prominent characteristics of qualitative research. In qualitative research, it is generally accepted that theoretical saturation can typically be attained through 30 participant interviews, as long as the topical scope is narrow (272,273). The sample size for this thesis was constrained to a maximum of 30 participants based on financial constraints as well as the appropriate sample for a qualitative Master's thesis project. Sample size would grow to a maximum of 30 participants or when theoretical saturation was attained, whichever occurred first. In this project, the sample size reached 30 participants and theoretical saturation was attained for most topic areas, with only a few exceptions. The area of HIV treatment for example, did not reach saturation as not all of the participants were living with HIV and therefore could not speak about any experiences surrounding HIV primary care and treatment options. If time and financial limitations were absent, the sample size would have continued to grow to assess this emergent theme.

3.1.3 Interview Location

A Community Health Centre (CHC), located in downtown Ottawa, was contacted as a potential site in which the interviews could be conducted. Within the CHC, there is a program that offers primary care and prevention services surrounding HIV and hepatitis C, particularly focused on women and men who use drugs. Due to the relevancy of the services offered, the central location, and its history of welcoming researchers, this CHC was considered and later established as the sole location for the interview phase of this project.

3.1.4 Sampling Strategy

The project intended to document experiences to similar situations across a variety of demographic characteristics, primarily on the basis of sex and age. Purposeful sampling was undertaken to document perspectives across a range of sociodemographic characteristics, such as gender (272). Recruitment was constantly evaluated against the data collected to date. Difficulty was faced in recruiting younger participants, therefore no youth-specific conclusions will be drawn from this project.

To be eligible for participation in these interviews, potential participants needed to:

1. Have smoked crack cocaine in the previous 30 days;
2. Be able to engage in English-language discussions;
3. Fit the evolving demographic criteria; and
4. Be capable of providing informed consent for their participation.

3.1.5 Recruitment Strategy

Peer recruiting was considered to be the most effective method for engaging participants for this project. Peer recruiting is the process of engaging individuals who have an implicit knowledge of the subject area under investigation, primarily gained through their personal lived experiences (274-276). With respect to partnering with peers to examine crack use, peer recruiters would be those who are either active or former users of crack cocaine (275). This method proved to be invaluable to the project as individuals from isolated social networks were recruited who otherwise may not have been reached without the use of this strategy.

Participant recruitment for this project was undertaken primarily through peer recruiting and was supplemented with facilitated contact between the drop-in program outreach workers and existing clients of the program. To begin the data collection process, three participants were recruited through an outreach staff member at the drop-in program. This was an offer generously extended from program staff and was available throughout the interview process, if necessary.

Following these initial three interviews, recruitment through peers was initiated. Two peers, one woman (referred to as “Amanda”) and one man (referred to as “Adam”), were contacted by myself and were asked to assist in the research recruitment process.² Both were somewhat familiar with the process of research and had been

² To provide anonymity for the peer recruiters, they were assigned names for the write up of this work. The two peer recruiters were the first individuals who became involved with this work and therefore were given gender-specific names starting with A, the first letter of the alphabet. Interview participants

involved in the knowledge dissemination phases of earlier, Ottawa-based projects. Over the course of this project, Amanda became unable to fully participate due to other commitments, which was understandable and did not pose a threat to the integrity of the recruitment process. She did, however, recruit one participant to the process in the early stages. Adam was actively involved for the duration of the interview process. Both were compensated for the time and efforts they contributed to the project.

Adam and myself held daily meetings to ensure that both parties were aware of the evolving demographic requirements for upcoming interviews. Adam contacted potentially eligible interview participants either in-person or by phone. Through his ongoing work with people in Ottawa who use drugs, he was knowledgeable about many individuals who were smoking crack in Ottawa. Upon speaking with potential participants, Adam established when they had most recently smoked crack (relevant to eligibility criteria) and briefly explained the research project. Those individuals interested in participating were given an appointment time and informed of the interview location. Adam provided me with the date and times of these booked appointments as they were scheduled. Adam was receptive to the evolving demographic requirements and fulfilled these criteria as best possible.

This approach for participant recruitment was chosen for two reasons. First, peer recruitment was anticipated to minimize the impact on the CHC and the drop-in

were also given gender-specific names that began with the next letter in the alphabet. For example, the first female interview participant is named Brooke and the first male participant is named Bruce. Actual names of participants were not used in the write-up of this research. Adam, the peer recruiter, confirmed that none of the assigned names were the same as actual participant names.

program. Previous research studies conducted at the site had yielded large numbers of interested participants who approached the centre for information, which often made daily program operations difficult. Second, peer recruitment was chosen to allow for the best selection of eligible participants (275,276). Adam approached participants whom he knew were actively using crack cocaine, which ensured authenticity among the sample (275). He also approached participants and ensured they were comfortable having open discussions compared to being comfortable only with survey type questionnaires.

3.1.6 Data Collection Process

Interview questions focused on central themes, which emerged from the systematic review process, primarily surrounding personal crack use, healthcare usage, and perceived health status. The areas of interest, which comprised the thematic guide, provided direction for conversation, sought to gain an understanding of the behaviours around crack smoking in Ottawa as well as the ability and necessity to access prevention and treatment health services. A copy of this guide can be found in Appendix D.

The thematic interview guide was pilot tested with Amanda. She provided ongoing feedback during the pilot interview regarding topic areas as well as insights regarding the most appropriate format to deliver the discussion points to study participants.

Personal interviews were carried out with 30 people who smoke crack cocaine over the course of seven weeks during March and April 2011. Interviews were conducted in a private room within the drop-in program at the CHC. Upon arrival, participants were greeted and escorted by myself into the interview room. Prior to the commencement of the interview discussion, participants were provided with a copy of the information and consent form. A copy of the consent form can be found in Appendix E. The consent form was read aloud to participants and particular elements of the process were elaborated upon at the request of a participant. Participants had the opportunity to ask any questions they had and we spoke until they felt they received a satisfactory answer. Once all participant questions were answered to the point of satisfaction and it was

agreed that the participant had a thorough understanding of the interview process, the consent form was signed. To maintain anonymity, I signed the consent form on behalf of the participant stating that they agreed to participate and understood all parts of the consent and interview processes. Participants were offered to take their own copy of the signed consent form, although most declined this offer. All interviews were confidential and participants were not required to provide their name or any identifying information.

With consent of the individual, each interview was audio recorded on a digital recording device, which would later allow for digital file transfer. The audio recorder was placed on the desk between us, but in closest proximity to the interview participant. Interview participants were given control over the recording device and it was made clear to them that in the event of feeling uncomfortable, they were entitled to not answer a question or to simply turn off the recording device:

Kate: OK, so if at any point you're uncomfortable then we can stop, and that's your right. You can hit this small silver button and that will stop the recording, otherwise you can just tell me that you don't want to answer the question and we can move on. Does that work for you?

Dawn: Yes, absolutely.

Kate: Great, why don't we get started then...

Following interview discussions, participants were asked basic demographic information to allow for comparison between participant characteristics and to follow-up on thematic saturation between demographics. A copy of the demographics form can be found in Appendix F.

Following the interview, all participants were compensated \$50 for their time spent away from other activities and commitments. Bus tickets were provided to participants who expressed difficulty with transportation to and from the interview. During conversations, some participants discussed how money was a “trigger” for their drug use. In those instances, participants were offered the option of being provided with a grocery voucher of the same value.

Since the interviews touched on sensitive topics, which may have been difficult for participants to discuss, counseling services were made available at the clinic-based program for those who wished to consult a counselor following the interview. As well, all individuals were asked if they would like access to any of the program services before they left, such as access to onsite harm reduction supplies.

3.1.7 Data Management and Thematic Analysis

Qualitative data analysis methods used for this thesis were learned through independent reading (271-276); as well as ongoing consultations with the thesis co-supervisor, Dr Lynne Leonard, who has extensive academic and professional experience in the field. The qualitative analysis learning process was ongoing throughout the project.

Following each interview, the audio recording of the conversation was transcribed verbatim; all interviews were transcribed within three days from when they were conducted. This concurrent approach was imperative for the recruitment process to ensure that subsequent participant demographics reflected the important themes emerging from earlier conversations. In almost all cases, all recordings from one day were transcribed prior to the commencement of the next scheduled interview. According to Morse & Field, preparation and early stages of data analysis commence as soon as data collection has begun (273). A manual method of coding and analysis was undertaken rather than relying on the use of software, a decision based on points brought forth from published sources (272,273).

Immediately after transcription, each transcript was read to ensure accuracy and re-read to allow for identification of various thematic areas. Following transcription, the first level of coding was conducted. A qualitative study typically analyzes data for patterns or themes, which allows for the presentation of themes as the unit of analysis (274). This first level of analysis established the various high-level codes, which became

the identifying themes across participants (272). With this approach, the process of data analysis facilitates the comprehension of emerging themes (273). Each individual transcript was initially coded with high-level themes. High-level themes aided the subsequent participant interviews. Documents were then created, one per theme. For example, all lines of transcripts that covered the topic of drug treatment were put in the “Drug Treatment” document. Within the document, more specific coding was enacted to capture sub-themes, such as ability to access drug treatment, willingness to try drug treatment, previous experiences with Ottawa-based programs, and so on. New documents were created with each sub-theme to allow for comparisons across demographics.

A substantial number of themes emerged. The themes that are presented in this report reflect those which could help frame a response to the research objectives which were set out for this project.

3.1.8 Ethical Approval

The Ottawa Hospital Research Ethics Board (OHREB) granted approval to this thesis research project on October 15 2010, with the approval to conduct the research process until October 1 2011. A copy of the approval letter is included in Appendix G.

In addition, once the CHC had agreed to be the interview site for this project, an internal ethical approval process was carried out. Two rounds of ethical approval were sought from the CHC, first from the direct program-related staff members to assess the impact on their clients and clinic workload resulting from this project, and second from the senior management team at the CHC to confirm impact on clients and staff, as well as to determine if the centre was willing to support the research objectives. The first phase of approval from the clinic staff was obtained on February 24 2011, and the second phase of approval from senior management was obtained on March 5 2011.

3.2 Descriptive Results of Participant Demographics and Characteristics

3.2.1 Demographics

Among this sample, there were equal proportions of women (n=15) and men (n=15) interviewed. This equal proportion was unintentional as sampling was based on fulfilling saturation across various sociodemographic factors. No participants in this sample identified as transgendered.

The average age of all participants was 43.1 years. Within the sample, women had a slightly younger average age (42y) compared to males and also represented a more narrow range of ages (25-56). Male participants represented a more broad range of age (24-63) and had a slightly higher average age (44y) compared to female participants.

The majority of participants identified as Caucasian (n=23) with the second largest proportion identifying as Aboriginal (n=4). Although it is difficult to determine whether this composition is representative of the individuals who smoke crack in Ottawa, compared with the literature it would appear that Aboriginal participants were underrepresented in the sample. Although the published literature identified African American individuals as being particularly at risk for crack-related health concerns, great difficulty was had in recruiting this demographic in Ottawa.

Most participants in this sample identified English as their first language (n=23) with the second largest proportion reporting French as their first language (n=6). One male participant identified Romanian as his first language.

All participants in this sample were residents of Ottawa, Ontario. Although many participants in this sample were unstably housed and were not living exclusively in one neighbourhood, all were able to identify the area resided in most often. Participants reported living in Lowertown (n=13), the Byward Market (n=7), Vanier (n=3), Centretown (n=3), Sandy Hill (n=1), Hintonburg (n=1), Old Ottawa East (n=1), and Old Ottawa South (n=1). Two-thirds of the sample reported living in the downtown core of Ottawa, which would constitute the Byward Market and Lowertown. The most interesting gender difference in this section is the larger proportion of women (n=11) who reported living in Lowertown, compared to men (n=2). It is suspected that this is partly due to the women's transitional, harm reduction housing and women's outreach shelter located in Lowertown. There is no male equivalent for this type of housing in Ottawa, although most men who reported living in transitional residences or rooming houses reported living in either the Market or Centretown.

Housing and challenges surrounding housing were mentioned by many participants in interviews, particularly the issue of housing stability. For presentation of this information, participants were categorized as either having 'stable housing' which meant they had a consistent place to stay which they were not required to leave in the future. This included individuals that rented or owned their own home or apartment.

‘Unstable housing’ here will mean that participants reported staying somewhere that was not their own or a place which they were permitted to stay for only a short time, this includes shelters, couch surfing, transitional housing, short-term rooming houses, and staying on the streets. Slightly more than half of participants (n=17) had stable housing during the time of interview and slightly less than half (n=13) were unstably housed during the time of their interview.

The vast majority of participants reported an annual income of less than \$30,000 (n=27). Approximately half of these participants reported an annual income of less than \$10,000 (n=13). Three participants reported a total income of over \$100,000, all of whom made clear this income was a result of being involved in dealing crack cocaine. Comparatively between sexes, we see that the income stratification is approximately equal with men having a slightly higher annual income than women.

The largest difference between genders is observed regarding education. Overall, the men in this sample had an overall higher level of completed education than the women. A greater proportion of men had completed high school (n=6) than women (n=1) and a greater proportion of men had completed any college, university, or trade school (n=7) compared to the women (n=3). Only a few men in this sample had less than a high school education (n=3) compared to a larger proportion of the women (n=11).

3.2.2 Drug Use Behaviours

In this sample, women reported smoking crack at a much higher frequency than their male counterparts. Slightly less than two-thirds of participants (n=19) reported smoking crack on a daily basis. Interestingly, this was reported by almost all women (n=14) and only one-third of men (n=5). One woman reported smoking on a weekly basis and one-third of men (n=5) reported smoking on a weekly basis. No women and one-third of men (n=5) reported smoking crack only one or two times per month.

Just over one-third of participants (n=11) reported also injecting opiates, with approximately equal proportions of women (n=6) and men (n=5) reporting the behaviour. Although injection drug use was not specifically assessed during these interviews, evidence has shown that dual users of crack and opiates may have unique health services and harm reduction needs.

3.2.3 Self-reported HIV and HCV Status

Out of respect, participants were never directly asked whether they were living with either HIV or HCV. However, through conversations regarding disease transmission risk factors, all participants voluntarily disclosed whether or not they were living with either one of these diseases. Length of time focused on these discussions varied depending on the participants' comfort level and degree of experiences. All participants voluntarily provided information on their HIV and HCV status.

More than two-thirds of this sample (n=21) were living with HCV. A larger proportion of women (n=12) than men (n=9) reported HCV infection. With respect to HIV status, three men and three women reported living with the disease, according to the interviews. It should also be noted that all six participants in this sample that were living with HIV were also living with HCV.

The prevalence of HIV and HCV status in this population is based on voluntary disclosure of serostatus which therefore may underestimate the prevalence as some participants may not have disclosed their positive status or may not be aware of a positive status, due to lack of testing and engagement in high-risk drug using behaviours.

3.2.4 Interview Length

It was initially anticipated that interviews would take approximately forty-five minutes, although one hour and 15 minutes was blocked off for each participant in the event that the interview went longer than anticipated and to give appropriate time for referral to counselor or accessing harm reduction supplies if needed. The average interview length was less than anticipated at 38 minutes and 17 seconds, although there was great variability in the range of length of interviews. Interviews did not last as long as anticipated for two reasons: i) it was often not necessary to converse for that amount of time to elicit necessary information and ii) many participants had difficulty continuing interview past half an hour, particularly if they had recently used drugs or were anxious to use drugs.

3.3 Healthcare Experiences of Ottawa Residents who Smoke Crack

This first section of results from the qualitative interviews addresses the first research question regarding the healthcare experiences of women and men who live in Ottawa who smoke crack. This question was deemed to be important through systematic review findings.

Participants described experiences of barriers impacting their ability to access personally relevant and prompt medical care. An analysis of the data relating to healthcare experiences revealed a range of significant barriers in accessing healthcare. From the data, four distinct themes emerged relating to this topic: i) connecting with and receiving ongoing care from a family physician, ii) ability to access primary care in the community, iii) positive and negative experiences with local healthcare providers, and iv) crack use as a barrier to receiving appropriate treatment and specific kinds of medical care.

3.3.1 Connecting with and Receiving Care from a Family Physician

Many participants expressed difficulty in obtaining a family care provider in Ottawa; a situation that often prevented them from making initial contact with the healthcare system. Although the difficulty of finding a family doctor in Ontario is not unique, it can pose additional consequences for individuals who smoke crack as they are more likely to require attention for acute and chronic conditions. The development of abscesses

and burns, both common outcomes of drug use, can be easily managed if responded to promptly however, may become more complex to manage with delayed treatment.

Participants discussed the difficulty in finding a regular family physician in Ottawa. Lucas, a 44 year-old man who is living with HIV and hepatitis C, is in contact with specialists for his ongoing disease management, but still lacks an access point to receive general medical care. He explains:

I have no family doctor. I have my HIV and hep C specialist at [name of Hospital]. But I haven't had a family physician for years, I can't find one.

Through his search for a physician, Cameron, a 36 year-old man, faced structural barriers which prevented him from being connected with a local physician. For individuals who use drugs, a methadone provider can support them in reducing or eliminating their opiate use. However, for Cameron, it became a barrier to obtaining a family physician. Cameron explains:

I've got hepatitis C though and I've got bad migraine problems and stomach problems. And I can't get a family doctor right now because I have a methadone provider. I'm down to 27 mg. [of methadone], but there's this program called Health Connect. [...] They have a website and a phone number and you basically explain your circumstance. Well, they had a phone number, now it's just a website and they set you up with a doctor who is taking patients. Yeah, but the fact that I have a methadone provider, she provides that and nothing else, but it comes up on their webpage as "You have a doctor" and basically frig off. So I've written them twice now saying I have a doctor but the only thing I can ever get is methadone. I'd like to get a CAT scan or a CT scan or whatever on my head to see what the underlying problem is.

The difficulty in finding a doctor therefore created additional barriers for many participants and many felt that not having a family doctor prevented them from accessing community-based care options. Low-threshold clinics were often not an option for those participants without a regular family doctor. Walk-in clinics, for

example, may see a large number of patients and therefore restrict walk-in services to individuals who have been taken on as patients by the on-site healthcare providers. This lack of walk-in options makes it difficult for crack users to make that initial point of contact with the healthcare system. For participants, having a regular family doctor provided a “gateway” to other services, as was the case for Brooke, a 39 year-old woman living with hepatitis C:

A few times, I came to [name of walk-in clinic] and I tried to see the doctors upstairs and they were like, “No, you can’t - you don’t have a family doctor in here.”

Some community clinics however, will take on patients that do not have regular providers but may offer only limited services. In this sense, having a family doctor would provide individuals the ability to access a more comprehensive level of healthcare. Many of these clinics offer only essential care services provided by nurses or nurse practitioners. Gwyn, a 56 year-old woman who is a dual user of crack and opiates explains:

Well [my access to care] is not that good because if I can only see a nurse, then she’s limited to what she can do. And for a doctor, well...it’s good to have a doctor because it’s good to have one. They can do more. I’d say narcotics but I mean... Methadone helps a bit but it doesn’t help with [my back] pain. I have a slipped disc and I have a lot of problems with my back too, it hurts all the time.

The availability of any services is helpful however; the absence of a regular provider does limit patients on what aspects of care are made accessible. Difficulties in finding a family doctor does limit the comprehensiveness of care however, the presence of a regular provider may not always be sufficient.

While most participants agreed on the importance of medical care, participants emphasized the need for high quality care. Participants identified a need for certain

qualities in a family physician, such as compassion, seen as imperative for establishing a successful patient-provider relationship. Often based on earlier negative experiences, participants reported a feeling of guilt regarding their crack use, which led to trepidation in speaking with a primary care provider. A lack of compassion and awareness about drug addiction among providers led participants to feel that their needs were not being met nor were they being understood. Cameron, a 36 year-old male who smokes crack a few times per month, explains:

[You need] understanding. Care and understanding. I don't want an in and out appointment, I just want to get rid of my headaches. I don't want to be in pain every day. That's another reason why I really cut back on crack using. The day after smoking I just feel brutal. Talk about eating 1000 mg [of Ibuprofen], I probably eat 2000 mg just to get rid of a post-crack headache. It's really stupid. But because of the use, and because of my guilt with it, that also prevents me from seeking the services I have might access to.

Celine, a 36 year-old woman who is a daily user of crack, also faced a lack of compassion from past providers:

Yeah, sometimes I feel like I'm scarred for life. Sometimes I feel like this is who I am, this is who I'll be my whole life. A crackhead. Even if I quit, then I'll still be a crackhead to some healthcare providers. But I hope not, maybe that's just me. Maybe I'm just paranoid about it.

And as described by Grant, a 35 year-old man living with hepatitis C, the search for a compassionate physician who can provide the first line of care is further hampered by a general shortage of local physicians:

There is a shortage [of doctors], I'm not quite sure why, there's got to be a number of reasons. But you can find a family doctor but you've really got to find the right one. One that cares, one that has....so people have to do their research.

James, a 39 year-old man, is an example of a patient with a compassionate and knowledgeable provider. As such, it allows for an honest exchange of information which likely leads to improved quality of care:

No, my doctor is pretty knowledgeable about the drug use and stuff. I'm pretty straightforward with her about my drug use, and I do pee tests and stuff. Most of them come back clean and some not, but I do tell her.

The voices of these participants highlight the difficulties of not only finding an available family physician but one who is knowledgeable about drug addiction and who is willing to take on patients who are dealing with the complex challenges of ongoing drug use.

People who use drugs often require various providers to adequately provide a spectrum of care. This demand for additional care however can provide challenges not often experienced among the general population, as seen with Cameron and his methadone provision. Connecting with a regular family doctor was seen as important by participants as this relationship often acted as a “gateway” to other services, such as community clinics and referrals. Having access to a family doctor provided a more comprehensive form of care to participants as they believed a doctor was able to provide them with more aspects of care compared to a nurse, whom they may see at a community clinic. Most strongly observed however, was the difficulty that participants faced in trying to connect with not only an available family doctor, but one who was compassionate and knowledgeable about drug use and addiction-related challenges.

3.3.2 Ability to Access Primary Care in the Community

In the absence of having a regular family physician, many participants relied on low-threshold health services available in the community. Low-threshold health services are those which are more easily accessible for the general population and may not require certain pieces of identification, such as an Ontario health card, which may be required by other medical clinics and family practices. In Ottawa, low-threshold services exist within Community Health Centres (CHC), shelters for people who are homeless, as well as other outreach agencies which include a focus on physical and mental health.

For some participants, these low-threshold approaches are comprehensive and often sufficient to meet their healthcare needs. Evan, a 63 year-old man who is a weekly user of crack, explains:

Oh yeah. I don't have a doctor so I go to [name of CHC] and work through whatever. I try and keep away from... I don't think I've used my health card in ten years. So I don't. I can get the same care at the [name of shelter]. They have a nurse that goes there and they can recommend you see her, or I go to see a nurse if it's bad enough. But I've been pretty lucky. Too many years in the Pen and that's what happens. Do nothing but work out and eat. It kind of keeps you younger.

Marc a 56 year-old man has a similar perspective:

I would go to [name of CHC]. I can see a nurse there, if I have a problem. They'd prefer me to go to a family doctor but they do look after me well there. If it's an emergency then they'll help me.

By not requiring personal identification, low-threshold clinics provide a simplified route to receiving primary care. Jodi, a 30 year-old woman, is fortunate to have a family

doctor, although scheduling is often difficult so she describes the multifaceted care she accesses:

I have a family doctor right now but I haven't seen him in awhile so [the clinic] wants to hook me up with a psychiatrist because my family doctor has prescribed me anti-depressants and stuff, but they want to see if there's any bipolar issues, or anything like that. And recently, I went to [name of clinic] and I had an abscess. I went and they were great, [the clinic] gave me Ensure, gave me cold and flu medicine, and everything. I didn't even have my health card and it was not a problem. It was kind of cool because I have no ID.

Holly a 56 year-old woman describes the availability of appointments at a low-threshold shelter-based clinic:

Yeah, it's easy to get an appointment. It's all doctors and dentists that volunteer, but they're all good ones.

Dawn a 44 year-old woman who is living with HIV and hepatitis C receives a more comprehensive form of care through a shelter-based hospice care program:

Well right now I live there at [name of shelter], and I love it. They take care of people.

And although Celine does not have the ideal experience, she does feel that her needs are mostly met through the low-threshold services:

I go to the [name of shelter] but they're usually not that helpful. I'd probably go to [name of CHC] 'cause there's a clinic there and I know all the nurses and stuff [...]. They're just support workers at [name of shelter], just workers. So you go and you ask them and you tell them that you need help, but sometimes they don't know what to do. I go to the clinic where I am – I get my meds from that place so I go to the RN there. And they have a doctor there twice a week. But, I don't really need to see a doctor, cause the RN prescribes the pills too.

Access to nurses in community care settings is vital for some participants for providing access to primary care but also ongoing care with specialists. Gwyn, a 42 year-old woman, explains her experience:

Well, what [the nurse] can't do she'll....like my feet right now aren't good. I mean if your feet aren't good then the rest of your body isn't very good. My feet are in

really bad shape so she's sending me to a foot specialist. [...] Like today, my toes are really hurting me. She's getting me a foot specialist for that. I think it started when I was on the streets, then it started getting really bad in the shelters, germs in the shower. When I was living in the streets then my feet were in boots all the time, you don't get to wash them as much. It's a really shitty life.

For Cameron, a 36 year-old man, accessing low-threshold services enables him to receive aspects of nutritional care:

Yeah, if I didn't know people at [name of CHC] that provide basic medical care, then I don't know what I would do 'cause I can't even afford to buy the Ibuprofen that I need. I'm vegetarian and I like to take vitamins, I've got hep C so I've got to eat pretty well. But it's a struggle. And I know that smoking crack certainly isn't helping any of it but I get to the level of frustration where I just don't give a darn.

From these participants, we hear that they had successful attempts with accessing low-threshold care in the community. As a result, they received satisfactory primary care and often received access to prescriptions and needed referrals. For individuals who are using crack, providing access to any point of care is important. For those who are heavy crack users and have more chaotic lifestyles, the ability to receive immediate care from a nurse in a community clinic may supersede the necessity to have a regular family provider. The low-threshold community approach to care often does not require appointment booking or personal identification cards and therefore presents fewer barriers to this patient population.

Not all participants however, had positive experiences with low-threshold community care. Erin, a 52 year-old woman who smokes crack once per week, faced challenges when she tried to seek care. She explains:

It's busy at [name of clinic]. Yeah, it's very busy. But they [name of clinic] don't even have any decency sometimes. I went there early because I know they're busy and I wanted to get in and out. I got there and there was a line up before the place even opened. And they were late showing up. I waited half an hour past their

opening time and still nobody showed up. I thought OK I'm going to make the effort to go and get something checked out, and then I said to hell with it.

For Erin, the failed attempt to receive care became a deterrent to using a clinic in the future.

When healthcare providers are aware of a patient's drug use it becomes challenging when a patient is in need of medication since providers are often reluctant to provide prescriptions to active drug users who they do not see on a regular basis. Although this can be a difficult decision for a physician, it also becomes a barrier for a patient when they are unable to get required medications. Bruce, a 28 year-old man who was able to access care, faced challenges with the disjointedness among various clinics when it came to prescriptions:

I'm getting fucking Ativan for chronic anxiety and I've been getting it from a drop-in clinic on Bank Street. For the last couple years when I got to Ottawa, I tried to have that [prescription] transferred to [a different clinic]. But [the doctor] refused to do that. So that was the only thing, other than a referral, is what I need a family doctor for. So I've pretty much just been going to this other doctor. Legally they're not really supposed to prescribe narcotics so that's why I was trying to have it transferred over to an actual family doctor. She refuses to take part of that for some reason, but I've been on [Ativan] since I was 17 years old.

Aside from his difficult experience just voiced, Bruce went on to explain a more recent, positive experience with accessing care. Although he still was unable to connect with a family doctor, he explains how the role of a social service worker made a big difference:

Actually the main thing that got everything started for me was my welfare worker, the addictions specialist, and he managed to get all my medical records transferred from [name of city], which is something they never agreed to do at [name of CHC] for some reason. That was their main excuse for not taking me, was that the doctors had no record of me having hepatitis and they had no record of me having hemophilia. I kept telling them that I just moved from [name of province]. I told them who they could call to transfer it but they refused.

The idea of “having someone who cared” emerged as a theme among participants, particularly for making the initial linkage with primary care services. Cameron explains the need for this connection:

Yeah. You need somebody like [name of CHC worker], as opposed to the people they have at [name of clinic] and the hospitals and all that. [Someone] that understands all of this and is willing and able to help somebody. I think that makes all the difference. When people realize that there are things out there for them, it's empowering. It's a powerful experience; it's just that nobody knows. Yeah and it's the same at [name of clinic]. So many people have turned on to the Mental Health Association you know, certain drop-ins with doctors. And once they get that started you know, they get their health a little bit better, their self worth goes up, and maybe they can even get a place. And maybe they can get a job, you know? It's just options, providing options for these people. We're so limited right now and I know even the doctors where I go, somebody goes in looking a certain way, they're going to be judged as such. I find that really disheartening, especially coming from such educated and enlightened people. You know? Health professionals have been considered gods for so long. It's disappointing when I find myself among someone who is really closed minded and not willing to help somebody just because they have a specific problem.

Evident from the voices of multiple participants, the most important aspect of care is the ability to make the initial point of contact either through a nurse, a physician, or a community outreach worker. Establishing contact with a clinic or CHC is not only intimidating for this population, but also difficult, as a result of needed documentation in some clinics. The voices of participants illustrate the need for compassionate and supportive frontline staff, the staff with whom patients most often make initial contact. By facilitating a comfortable healthcare environment from the outset, patients can feel more confident and supported during their visits and therefore may be more likely to seek additional care in the future.

3.3.3 Past Experiences with Hospital-based Care

Many participants spoke of past experiences with hospital-based healthcare providers that shaped their views on seeking healthcare. As we heard, healthcare providers and their actions often have a large impact on patients and can affect their willingness to seek care. Depending on a provider's level of addiction awareness, they may be more or less willing to respond to drug use-related health concerns. Some participants identified particularly positive experiences with providers. Darin, a 43 year-old man, resorted to hospital care for an abscess which was left untreated for weeks. He describes:

The doctor was amazing. At 5:30 in the morning he was chipper and I expected him to be like "Damn, I want to get out of here." And he said "That's pretty nasty, we're gonna have to cut that open." So he gave me a shot to freeze it and then cut it open. He asked me if I had any idea how I got it and he said "Do you take any drugs?" And I said, "Yeah, I smoke crack." And I remember... he just said "Straighten up and fly right, that's what that's from." Turns out it was from someone handling messy chemicals with the crack. He was very professional.

Jodi, a 30 year-old woman who is daily user of crack, went into labour with her daughter while she was incarcerated. She describes her trip to hospital for the birth:

The health providers were pretty good. They were very supportive and stuff. I had guards with me and everything so they understand what you're going through. They were awesome with my daughter, the nurses and everything. I was there every three hours to feed her and everything. I wanted to be there, you know? That's the only time I got to spend with her and while I'm sitting there bawling, they were very supportive and stuff.

Both Darin and Jodi described hospital-based experiences where healthcare providers were both professional and supportive, traits that were valued by participants during their time in hospital. It is of particular importance to explore care received in hospital as this population often has difficulty obtaining family doctors and therefore has an over-reliance on emergency medical services. In contrast to Darin and Jodi, a greater

proportion of participants described past hospital-based experiences which were less than satisfactory. Erin, a 52 year-old woman, describes her experience:

I ended up in the hospital a few times and once they do the test to try and figure out what's wrong and they realize you have [crack] in your system. You do get treated differently in the hospital and things. It's like they look at you like....I guess we're considered the bottom feeders maybe. Their attitude changes when they know you use drugs.

Bruce, a 28 year-old man, found that his drug use became a barrier for receiving care for a condition unrelated to his crack use. The lack of awareness and compassion regarding addiction is again evident:

Every time I go to [the hospital] they just think I'm there to get [drugs]. Like when I get bleeds from my hemophilia, like when you get bleeds you get swelling and obviously get pain, but I've never gone there and asked for pain killers. I just go and ask for my Factor 8 to stop the bleed. And doctors aren't very familiar with hemophilia and they always think Factor 8 is some kind of pain killer or that it's a drug. I've had hospitals refuse to treat me or even refuse to call somebody else to ask them what I'm talking about, won't even confirm what it is that they think I'm asking for. They won't even do it. So I've had major issues. Usually when I get bleeds then I'm not even able to get treatment at all. I mean my hemophilia isn't that bad and the bleeds will usually stop on their own. I might spend three months limping around or walking with a cane but it will go away.

Marc, a 56 year-old man who smokes crack daily, also faced a difficult past experience at a hospital when requiring immediate care:

When I was drinking, I broke a rib and they sent me home. But every day I was getting sicker and sicker and throwing up blood and bile but I was afraid to go back to the hospital because I was taking drugs. I was abusing [the drugs] and drinking a bottle of vodka a day. But I finally went in after ten days and they put me in the room where they keep all the crutches and they didn't attend to me. They knew I was an alcoholic too. Eventually, I got a CAT scan and what had happened, my rib had punctured my spleen and I was bleeding out. Everything else was following very quickly and I was very close to death.

As the voices of these three participants demonstrate, there is a need for more awareness of drug addiction in hospital-based settings. Physicians may have limited exposure to drug addiction during their medical training, and it is possible that others

working within a hospital setting have even less education or training on this topic. Many of these participants were very hesitant to seek medical care and therefore waited until an emergency trip to the hospital was necessary. If these experiences deter them from seeking emergency care in the future, it may result in more serious adverse health events which become more complex to manage and treat.

Some participants spoke of their experiences with disclosing their crack use to healthcare providers. The emergence of this theme is particularly important as a resistance to fully disclose personal drug use could lead to serious medical complications and adverse events, particularly if pharmaceutical interventions are required. Hank, a 53 year-old man describes a recent experience where he required kidney dialysis:

[The doctors] knew that I smoked lots of pot but I don't share a lot about my crack. I think it would've changed how they treated me. I knew because when I first went in and they did their diagnosis of me, they said this is a birth defect, it's not induced. So at that point there, I knew it wasn't from the crack or pot or drinking, which I've never drank that much to begin with, that caused the illness. So I didn't think that...and for the amount that I was doing, I didn't think I had to tell them about [the crack].

Rationalizing that it was not medically necessary to disclose his crack use was a justifiable reason for Hank however, providing complete information to medical providers may still be important for developing an appropriate treatment plan. The fear of disclosing this information may have affected the treatment plan surrounding his kidney dialysis and could lead to adverse health outcomes. Although Hank elected to not disclose his crack use to providers, Cameron, a 36 year-old man, chose to fully explain his drug use:

Well, I told them. I'm really honest with people especially healthcare professionals. And the fact that I had an abscess and I told them I'm using morphine, I'm using crack cocaine, I'm using Valium, that their attitudes changed right away. It was really hard and I had to wait three days for care. My doctor at the time said it was the biggest [abscess] he'd ever encountered. It was brutal. I'd never anything like that before.

For both Hank and Cameron, their decision to disclose some or all of their drug use was a primary concern for them. Both men perceived that their crack use would lead to poorer quality treatment from providers. For Cameron who did disclose, the resulting delay of treatment may lead him to disclose less information in the future, which could lead to an inappropriate treatment plan. Again, the need for compassion and addiction awareness among providers is emphasized as essential.

3.3.4 Crack Use as a Barrier to Seeking and Receiving Healthcare Services

Participants described their crack use as a barrier to accessing and receiving adequate healthcare, either as a result of their own choices or as a result of stigma among healthcare professionals. The emergence of this theme demonstrates that not only is crack use leading to adverse health effects but also that crack use is creating barriers to seeking and receiving adequate medical care. Some participants expressed that their physical health became less of a priority to them as a result of their crack use and impacted their healthcare seeking behaviours. Erin, a 52 year-old woman who was recently diagnosed with COPD, describes her experience:

I would refuse to go to [a clinic]. I don't care enough about myself to make the effort to go. [My COPD] was so bad that I couldn't even take a step without gasping for air but it had to get that bad for me to go. I hadn't been feeling well for up to three weeks prior probably.

Celine, a 36 year-old sex trade worker who does not use condoms, was not experiencing urgent respiratory issues like Erin however, she similarly demonstrated a decreased motivation for seeking healthcare as a result of her crack use. Celine describes how her annual check-up became less of a priority to her:

My annual check-up, like my STD check up and stuff, I put that on the back burner. 'Cause I'm always doing drugs so I'm always inviting impurities into my body, so I put that way off. It's been about a year and a half but I normally go once a year.

Although she is engaging in high risk sexual and drug use behaviours, the words from Celine show that there is no perceived value of an annual physical and Pap smear. In devaluing her physical health and not seeking healthcare, she is missing an annual opportunity for STI screening as well as the opportunity to receive important sexual health information and harm reduction resources.

For another participant, the experience of stigma from healthcare providers was a second barrier that was created as a result of their crack use. Brooke, a 39 year-old woman, describes her reaction to judgment from healthcare providers:

I'm very honest and like I mean, some of the doctors judge you and stuff like that, because [crack] is not a very well thought of thing. So like I mean, sometimes they judge me too harsh and I'll walk right out on them.

For Brooke, judgment from providers resulted in her not receiving medical care at all. The stigma from providers therefore created a barrier to her approaching the same low-threshold clinic in the future.

Dawn, a 44 year-old woman, is in need of another type of healthcare, dental care, which is even less available as a low-threshold service in Ottawa. As a result of her crack use, Dawn experienced both stigma as well as decreased motivation for seeking care. She explains:

I need a dentist. And I'm not taking care of myself because of [the crack]. So I don't go. I get too high that I don't want to go. And they know that you're high so they don't want to work on you because they don't want nothing to happen.

For Dawn, the compounding of barriers resulted in an absence of dental care altogether. Dental care is particularly in need among this population as many individuals noted that crack smoking has eroded their tooth enamel. However, there is likely even less awareness of addiction among dentists compared to physicians. Many participants reported they were in need of dental care and many were nervous to access this service as they believed their crack use would be evident from their teeth and would lead to stigma from the dentists.

Some participants found that their crack use created barriers to receiving more complex care, such as disease management treatment. Bruce, a 28 year-old man, found that his crack use was a barrier to receiving treatment for his hepatitis C infection, which was a result of a childhood blood transfusion:

My methadone doctor told me that the reason that he never referred me [to hep C treatment] was because of my use. He didn't think the government should spend \$60,000 dollars treating my liver when I'm still doing crack on the side and drinking every now and then [...] I've been pretty pissed off at him for that. But for me, I haven't worked at all for the last four years because of the [liver] pain I had and the related issues that I've had. With my last job, the reason that I got laid off was because the pain and the chronic fatigue that I had, which is basically because of my liver. But when I had my two jobs and my place for two years, I was clean. I was on methadone during that time and I would smoke weed once a week and that was it. I didn't do any drugs at all. So the way I see it and the main reason that I've been using the last couple, like six years, is because I'm basically just waiting to get a referral [for treatment]. I can't work, I'm stuck on welfare, so what am I supposed to do with my time?

In the words from Bruce, it is evident that his current crack use is acting as a barrier to being referred to and receiving much needed medical treatments. The lack of appropriate treatment in turn is resulting in decreased employment, decreased income, and an increase in his crack use. Although the hepatitis C therapies may not be successful with concurrent crack use, there is still a gap in service provision which could facilitate the transition either towards decreased drug use or increased education regarding options for care. By not providing a treatment option, Bruce has increased his crack use, an outcome which is causing increased harms, rather than reducing harms.

Among the participants, there was one who did not feel that their crack use was a barrier to receiving proper medical care. Neal, a 27 year-old daily crack smoker, spoke more positively when reflecting on his experiences:

I know where to go to access all of what I need to get. I'm pretty intelligent about it. Depending on how you go about things, 90% of the time, most places will help you. You just have to be intelligent about it.

The words from Neal are encouraging as he represents one of the younger demographics in these findings. Neal was the only participant to have no perceived barriers to healthcare as a result of crack use and therefore it is not possible to make comparisons between ages and sexes as to why his experience may be so unique. However, the fact that this was only the case for one participant is discouraging. Overall, most participants faced one or more barriers to complete healthcare as a result of their crack use either in the form of decreased motivation to seek care, discrimination from healthcare providers, or an inability to receive a complete spectrum of care to meet their individual needs.

3.3.5 Summary of the Healthcare Experiences of Ottawa Residents who Smoke Crack

The themes regarding healthcare experiences in Ottawa emerged from the analysis of the participants voices. The number of family physicians who are willing and able to care for patients with drug addictions is limited. Accessing care from a low-threshold clinic in the community is a viable option for many of the participants, providing that they feel comfortable and supported during their visit. Experiences of stigma from healthcare providers vary but appear to be pervasive across many areas of care. Participants felt less discriminated against from providers who were more aware of challenges facing drug users and who are supportive of integrating drug-related aspect of healthcare to provide a more comprehensive approach to individuals. For this population, hospital visits are most comfortable and successful when an individual feels that the full disclosure of their crack use is both appropriate and free of judgment from providers. The disclosure of crack use by participants to healthcare providers has led to discrimination in past experiences and therefore has created barriers which deter crack-using individuals from seeking and also receiving appropriate care. Encouraging an awareness of additional and harm reducing medical interventions among healthcare providers may decrease overall stigma and could lead to improved treatment-seeking behaviours and physical health outcomes among this patient population.

3.4 The Availability of Crack-specific Drug Treatment in Ottawa

This second section of qualitative interview results addresses the second research question regarding the drug treatment experiences of men and women living in Ottawa who smoke crack. This section explores both the availability and appropriateness of drug treatment services in Ottawa. This question was deemed to be important through systematic review findings.

Participants described past experiences with drug treatment programming in Ottawa as well as gaps that exist in current drug treatment provision. Four themes emerged from the data regarding the availability of crack-related drug treatment programming in Ottawa: i) the lack of drug treatment programming in Ottawa, ii) necessary characteristics of appropriate drug treatment programs, iii) barriers to entering drug treatment, iv) need for an individualized approach within drug treatment programs, and v) recommendations for ideal drug treatment programs.

3.4.1 Lack of Drug Treatment Programming in Ottawa

A significant theme that emerged from the participants was the negative impact of treatment-seeking experiences in Ottawa. Both locating and engaging with an appropriate treatment program emerged as an important thematic area. Oliver, a 24 year-old man, provides his perspective on the availability of treatment programming in Ottawa:

There's no treatment here, there isn't. You have to go to jail to get any type of [treatment]....like there's no way into a treatment centre, because otherwise you're waiting for a year. I've tried to get into treatments here, and you can't get in. It's

way too hard. You can get into [name of day program] but its shit. Its right downtown in a drug use spot, but that's where I do my dirt is downtown. So why would I go to treatment there? I'm just going to go and see all the same crackheads that I use with.

Oliver was one of many participants that expressed a lack of treatment options in Ottawa. Many participants had previously sought treatment in Ottawa with mixed success. Cameron, a 36 year-old man, explains the need for immediately available treatment programs located in Ottawa. He explains that although there are treatment options located hours away, local programming for crack use is essentially non-existent:

Treatment, yeah, the fact that it's so far away. Most people that have double addictions to crack and opiates have to go up to North Bay, and that's a long way away. It's a long way for us. And that's the thing, and I know it's never going to happen, but if people could access something relatively quickly. If someone wants to get well, they should be able to jump on that and the fact that you can't even get a bed at detox is really holding people back. And the moment that you want that help and if it's not there, that moment could really discourage you from seeking treatment in the future.

The lack of appropriate and immediately available treatment options is a large problem among those seeking programming. In Ottawa, there are currently no treatment programs which allow for immediate intake. Most often, the waiting list for generic drug addiction treatment ranges from six months to two years. For someone who is contemplating treatment for their crack use, there is an urgent need for more immediately available programs. An individual who has an addiction to crack who considers treatment, may not be in the same mind frame six months down the road when a space becomes available.

Some participants had previously tried to find an appropriate drug treatment option in Ottawa but faced challenges with the types of programs that were available. A lack of crack-specific drug treatment programs makes it difficult for crack-using individuals to find a program that can meet their specific needs. Cameron describes his experience and how the lack of programming is interpreted by those who most need the services:

[Treatment] is not that good. It's really hard to get into. Much of it is Christian-based too, so if you don't come from a Christian background then that's really a challenge. Cause I have people coming to me all the time wanting to get into treatment. And there [are] lots for people with problems [with] alcohol and lots for people with opiates, but I can't think of a single crack-related program.... crack or cocaine. These people are basically – they think that nobody cares about them and they feel that there's nowhere to turn and they think they're going to get called "fucking idiots" even more. Yeah [treatment] is something that I've been interested in. But the time constraints, and the amount of time that I have to give up, I just don't want to have to give up any more for it.

The absence of available options may cause individuals to be less likely to seek treatment in the future and may act as a barrier to reducing their crack use. As well, there are inpatient beds available at a hospital-based detox program in Ottawa however, individuals who use crack are not eligible for those spaces unless they are also using opiates. The need for programs tailored for different forms of drug use stems from the fact that cocaine and crack are stimulant drugs, whereas opiates are depressants. As such, the nature of individuals who chose to use these drugs, as well as their behaviours and specific treatment requirements, varies substantially.

As mentioned previously by Oliver, the location of a drug treatment program is significant, particularly if it's located in the area where an individual would usually face triggers for their drug use and engage in the same social relationships. As expressed by multiple participants, the need for a change in environment is necessary for them to

feel confident that the treatment would be worthwhile and potentially successful. Darin, a 43 year-old man, identifies the need to remove himself from the locations where he uses drugs as being imperative for treatment. He describes the importance of leaving the neighbourhood in which he lives and accesses meals:

I think it's a change in environment, I suppose. Not exposing yourself to the same old thing every day, but that's hard when you live in Lowertown everyday and have your meals at the same place every day. Where people are buying and using, it becomes difficult. That's why if I'm working then I buy my own food and I go home and cook it, that way I don't have to see everything.

Although many participants spoke of a paucity of treatment options in Ottawa, Lily, a 50 year-old woman, spoke of the desire to complete an addiction treatment program outside of Ottawa. For her, removing herself from her typical environment and integrating with treatment participants who did previously know her were important. Her emphasis on this stems from the need to complete treatment in a supportive and non-judgmental environment. She explains:

I wouldn't want to go to [to treatment in Ottawa]. You would see people there and I don't want to know anyone. To know another person and they call you down, or they think you're lying. I don't want anybody there like that. Yeah, people I don't know. There's a lot of personal stuff that you get through, big time. Crack just doesn't grow on trees, there's always a problem. It's a problem or...people think its joy and there's not joy in it.

According to Lily, there is also a need for out-of-town treatment options for Ottawa residents, suggesting the need for increased communication and referrals between treatment programs in different municipalities.

A dominant theme that emerged from these qualitative interviews was the severe shortage of treatment programs in Ottawa. As well, participants expressed that there is

a lack of suitable options for reducing their crack use. Opiate-specific programs exist, including hospital-based inpatient detoxification programs, however there are no programs which specifically address crack or cocaine use. As expressed by participants, Ottawa has a severe shortage of treatment programs which can work to reduce crack use and respond to the treatment needs of those choosing to reduce their use.

3.4.2 Necessary Characteristics of Appropriate Drug Treatment Programs

Although there is an absence of crack-specific programming in Ottawa, there are treatment programs available which focus on drug addiction in general. This generalized approach is often unsuccessful for crack smokers as the program does not meet their needs but also because aspects of programming are often not well-developed or appropriate.

Some Ottawa residents who use drugs may end up in treatment as part of a correctional sentence. In theory, the approach to provide treatment to an individual rather than to punish them is encouraging but the process of mandating treatment is inherently flawed. There is a delicate interplay of variables which facilitate enrolment in a drug treatment program. The first area that emerged was that the desire to quit smoking crack must first originate from a personal, intrinsic need to quit. As expressed by many participants, this personal decision to quit is necessary in order to achieve greater commitment to a program, and to achieve more successful outcomes. Mandating drug treatment therefore forces an individual to begin treatment often before they've made that personal decision.

Holly, a 56 year-old woman, describes how she was mandated to begin drug treatment, rather than choosing to begin the program on her own when she was personally prepared to do so. She explains:

Kate: Why were you in treatment at that time?

Holly: Because they sent me, the courts. You know you can never quit a drug unless you're ready to quit it. You, or whoever, has to want to quit, not somebody else.

Kate: If you wanted to quit, do you feel there are options for you to go to treatment?

Holly: I don't need any treatment. If I decide to quit, then I'm quitting.

Similar to this sentiment, Dawn, a 44 year-old woman, acknowledged that a previous experience with mandated treatment was unsuccessful for her, as she was not personally prepared or willing to cease her crack use:

Dawn: I wasn't...it was just that I wasn't ready for it. It went well. Like it went well, but in my head I didn't want it. You know if you don't want something then it won't work. You know, you really have to want something. It was demanded by the courts.

Kate: Can you tell me about your reason to start treatment this time?

Dawn: This time. Well, I'm getting my apartment in two weeks. My daughter wants to come live with me on the weekends, she's 19. So you know, I gotta smarten up...it was my choice this time.

From the voices of these women it is evident that drug treatment programming in Ottawa should not only address an individual's unique needs for treatment, but also focus on the personal decision to begin treatment. Mandating drug treatment may be an opportunity for decreased drug use, however, long term post-treatment success will only be achieved if the individual is personally prepared to begin the difficult process of drug treatment and is willing to eliminate the behaviours and social relationships which are associated with their crack use.

The second necessary characteristic of a treatment program, compassion, emerged as participants spoke of previous experiences at Ottawa-based drug treatment programs. Some participants had negative experiences with drug treatment in Ottawa, an experience which was sufficient to end their time in the program, either by their choice

or by the choice of the program. This premature conclusion often resulted in a participant not attaining the desired reduction in drug use and also caused them to be hesitant and skeptical of subsequent treatment options. Often these negative experiences were due to a lack of compassion from staff members delivering treatment components. Felipe, a 56 year-old man, participated in a low-threshold approach to care which was marred by stigma from doctors at his program. He explains:

My therapist at the [treatment] place, the second time that I went there, all the therapists in the building bet money on how long it would take me to go back on my use. But, when I went, my therapy finished at noon and at 12:45 I was high, I was poking again It was tough. So it's not because of my mother that I poke, there's another reason. But it took me twenty-five or thirty years to even find out the issue.

Felipe felt that the psychological approach to treatment was appropriate. However, an unsupportive treatment environment prevented him from dealing completely with his addiction. Another participant, Marc, a 56 year-old man, participated in an intensive, residential detox program where not all staff members were sensitive towards treatment participants:

Kate: How long had you been on the waitlist [for treatment]?

Marc: I'd been going every Thursday and checking in with them for six months.

Kate: And you were finally able to get into the program?

Marc: Yeah. I lasted a week and I left. I felt that they were shaming me. There was a social worker who wanted to talk to me but as we went by the nurses' station, she asked all the nurses "Who's got gum?" And somebody had some gum, and she said, "Give it to him, I can't stand the smell of his breath."

Kate: That's terrible, I'm sorry that happened. Was that why you left?

Marc: Well, I got on drugs and alcohol for shame-based reasons, so it was the same thing. I left shortly after that.

From the statements by Felipe and Marc, we hear that their experiences in Ottawa-based programs were negative experiences as a result of staff interactions. A lack of compassion paired with the presence of discrimination created unsupportive treatment

environments for these participants. To begin drug treatment, particularly in a residential program, is a difficult decision and individuals need unconditional support from program staff during this process. There is perhaps, a lack of awareness among some staff members of these treatment programs which unintentionally results in poor treatment outcomes for participants.

James, a 39 year-old man, has participated in a variety of programs in Ottawa, none of which met his individual needs and therefore led him to be less optimistic about future treatment attempts. His experience also highlights the need for compassionate staff. For James, the rigidity in program rules and a lack of flexibility among staff led to poor treatment outcomes. Further, this resulted in James being less optimistic for future attempts at treatment. He explains:

James: I've been to like nine treatment centers. In 2001, I went to about seven of them in about a year and a half.

Kate: Was that all in Ottawa?

James: Yeah, [names of three treatment programs]. I finished [name of Treatment Centre 1] and then I had knee surgery and was prescribed morphine. At [name of Treatment Centre 2], it was a 30 day program. I was there on the 29th day, one day before graduation, and I was ten minutes late for dinner. They kicked me out and used me as an example. I did [name of Treatment Centre 3]. It's a formal program, two months in I got kicked out for using Tylenol and they said I had way too much in there and I was sabotaging my system and my treatment. I did the [name of hospital] detox program and I was there for three or four months. Usually you're there for a month before they transition you out to [name of outpatient treatment program] or whatever it's called. But again, I just had a kid at the time and they let me go home for Christmas. I did some coke, snorted it and it was in my blood, so I got kicked out for that. So yeah, I've been at a few.

James' experience demonstrates how strict rules are often not the best approach for drug treatment programs. Although a certain amount of accountability is necessary,

accommodating the needs for treatment participants is crucial. For James, the experience of leaving a 30-day program one day early under bad terms was a trigger for his crack use, which he resumed immediately.

From the voices of the participants, there emerged three characteristics which should be part of any drug treatment program. First, treatment programs and legal systems need to acknowledge the importance of a personal decision to begin treatment. Without recognition of this, engagement in a treatment program may be premature and unsuccessful. Second, compassion should be demonstrated by staff as well as in the guidelines and rules set out by the program. The need to increase compassion and decrease associated stigma is important to create a supportive environment for treatment participants. The need for compassionate and understanding staff within treatment programs is important and the development of supportive relationships between staff and patients may lead to increased awareness of addiction and provide additional support for the patient during their treatment program. Third, program rules and guidelines should be both compassionate and flexible. Individuals who use drugs have lifestyles which are dramatically different from the general population. As a result, strict adherence to rules and curfews is inherently more difficult and may result in poorer treatment outcomes. Treatment programs which would allow for individually tailored program rules and guidelines are likely the most appropriate for this population.

3.4.3 Barriers to Entering Drug Treatment

Participants identified a number of barriers which precluded them from either accessing or completing a drug treatment program. Two female participants faced structural barriers regarding public transportation services which prevented them from fully engaging with treatment services. Participants who are fortunate to secure a place within a program must also be able to arrive at the program location, particularly if a program is located out of town. Celine, a 36 year-old woman, explains how she had been accepted to a treatment program but faced difficulty with transportation:

Yep, since I'm a CMHA client, I talk about rehab a lot. I almost made it to rehab once. I was ready and on the next bus there but then no one paid for my bus ticket. Yeah, I know, eh? It got all mixed up on the phones and I almost went. All it would've taken was one phone call to the bus station to get me that ticket, but no one actually put it into motion, no one. So I was all ready, the papers were filled out, the program accepted me, and they set up a date. But the stupid bus ticket.

Although she had made the personal decision and commitment to begin drug treatment, transportation was out of her control and became a barrier to her participating in the program. Subsequently, Celine lost her place in that program as she failed to arrive and became discouraged from beginning the process again.

Lily, a 50 year-old Aboriginal woman, experienced her own frustrations with relying on buses as a primary form of transportation. In her experience, the treatment program went well but upon her return to Ottawa, the absence of functioning public transportation prevented her from accessing post-treatment support groups:

I already went to an [inpatient] program, so. But I mean, the buses failed. They were on strike that time when I came back from it, and so I didn't last long. You have to walk and walk to get to your destination. While I was at treatment, I didn't

mind. But when I came back here, it didn't take long. If things are running well and you can get to your places, then that's fine.

For these participants who relied on public buses as their primary form of transportation, the inability to properly utilize the services happened during times when treatment engagement was critical. Although city bus strikes are out of the control of drug treatment programs, treatment programs should strive to address the problem when possible by facilitating alternate means of transportation to participants or offering alternate forms of support.

A second type of barrier, personal barriers, emerged as significant for some participants. The lack of motivation to begin treatment or a fear of the inability to successfully cease drug use emerged as an important thematic area. For some participants, a decision to quit drug use or initiate treatment had previously led to hope and expectations among friends and family members, something that was difficult to face if treatment was unsuccessful. For Oliver, a 24 year-old man, this had been the case. As a result, his lack of motivation to quit drug use right now is an indicator for him that beginning a drug treatment program is not appropriate. He explains:

Yeah, I tried. I went to Ottawa drug court. Yeah. I think I'm not ready. I don't know. I think if you really want to quit it, you can, you know? If it's in your head that you want to quit then you will, and if you don't want to then there's not really anything anyone or a program can do for you, that's why I don't agree with the "you can go get help" kind of deal because you can do it yourself. Unless you're a weak little bitch and....that's the way that I think of it. If you want to do it, then do it. Don't talk about it and start something and get everybody happy, get your family excited about you quitting, if you're not really going to quit. I'm not going to burst anybody's bubble with treatment.

For some participants, the fear of unsuccessful treatment outcomes was a barrier to beginning treatment. Celine, a 36 year-old woman, feels that beginning a drug

treatment program may be a more of a negative experience for her, rather than a positive one. She describes the possibility of “screwing up” as a strong disincentive to beginning a program and the feeling of traumatising:

Well, I pretty much know all about [treatment]. There's counsellors that will talk to me and they have the proper paperwork, and that's about it. I'll talk to them...but it's this weird little cult to me. When they take you, it's weird when I think about it. It's not a positive thing; it's like a serious sort of traumatizing thing. It's like you can't screw up. If you screw up, it's a waste of your time and a waste of the workers time. And I don't want to screw up. They say that the average addict screws up seven times, but it just feels like it's so traumatizing, it's a lot to go through. Like it might actually be a more of a bad thing for me than a good thing.

For Celine, the prospect of unsuccessfully completing a treatment program, as well as the concern over wasting resources was significant to prevent her from seeking any form of treatment. She described a failed treatment attempt as traumatizing, which indicates the need for compassion and more support for participants if there are poor treatment outcomes. As a result of her experience, Celine was not interested in seeking treatment again. Properly assessing an individual's readiness to begin treatment, as well as their definition of “successful outcomes” is important to reduce these personal barriers to treatment.

From the voices of the participants, there emerged two significant barriers which prevented an individual from fully engaging with a treatment program. First, the structural barrier of transportation made it difficult for participants to arrive at treatment locations as well as to continue to receive support post-treatment within the community. Second, the personal barriers regarding the fear of unsuccessful outcomes were identified. For some participants, these barriers were sufficient to deter them

from seeking appropriate treatment options as well as enrolling in treatment programs in the future. In assessing appropriate treatment options for individuals who smoke crack, the substantiality of these barriers must be considered.

3.4.4 Need for an Individualized Approach within Drug Treatment Programs

From the data, four themes emerged which pointed to the need for an individualized approach to treatment for this population. The first theme which emerged was the need to identify obligations which may preclude an individual from participating in a traditional inpatient form of treatment. The decision to begin treatment for crack use is a difficult one even without competing obligations.

Depending on the nature and requirements of treatment programs, as well as an individual's severity of addiction, more intensive programs are often initiated. Inpatient treatment programs for example, require individuals to live away from home and often force them to leave employment or schooling. Engagement in treatment may require an individual to choose between their treatment plan and other obligations, a choice which is difficult and stressful. The need to offer treatment programming tailored to an individual's approach and commitment level is needed. Kurt, a 41 year-old man, recalls his own experience with competing obligations from school and drug treatment:

I was 17 the first time. See I moved out when I was 16 and decided to try and do something with my life. I went [to treatment] for two months and I was in high school. Well, I quit. But yeah, I went back to high school after that, because the first month was treatment. I had to be there eight hours a day for treatment. The second month I could go to school, be a resident, or go to work. So that was no problem, but the thing is though, when I went to pass my exam, I missed too much school that I couldn't do it. I threw it all away. So now, I only got a grade ten instead of grade eleven.

For Kurt, engagement in a treatment program negatively impacted his education. Not only was he unable to complete his grade eleven requirements, but the setback in school also triggered him to resume his crack use. If there had been an option for Kurt

to work towards educational credits at treatment, of if an extended curriculum were possible at his school, he may have had more favourable outcomes.

Although his drug use was beginning to interfere with work, Oliver a 24 year-old man, was actively improving his self-employment opportunities by purchasing necessary construction tools and supplies. He was placed in a similar situation where committing to treatment would require him to cease working and perhaps leave him unable to support himself post-treatment. He describes his choice to pursue work over treatment:

Yeah, there's a waitlist and I'd have to lose work and that's it – I can't lose work. I'm buying my own tools and shit. I've been saving to get my own tools. I just bought my own van. So yeah. I want to start my own company. I have guys...I'm doing subcontracting right now but I'm using other guys' tools. I have a brother-in-law and he's....he lets me use his tools so I'm trying to buy them from him, you know? So I work with a few guys and we do floors and ceramics and stuff. That's what I'm trying to do. It's that or treatment.

Lucas, a 44 year-old man who was involved with ongoing, seasonal projects found his work to be meaningful and of great value in his life. Although he was not happy with his crack use, the decision to choose between inpatient treatment and employment stemmed from fact that he was neither willing nor financially able to give up his work. For Lucas, having to leave work was too large a sacrifice in order to begin drug treatment and therefore he was left with no other treatment options. He explains:

But because I do [type of] work, I'm in between phases of my projects right now. Both projects are going to be starting up with the next phase within the next month or two, so for me to go into a treatment program would kiss my work goodbye, and I need the money. [...] Yeah. If I'm in an inpatient program then it doesn't work for me. An outpatient program would be what I was looking at if I decided to take that step. [...] The program has to be tailored to my specific needs. Take into account my work, so that I can continue with that, I have bills and food to pay for. That would be it.

For Lucas, the best option would be a treatment approach that permitted part-time participation and did not require him to sacrifice his work or income. From these men, we hear the importance of having program options which do not force them to choose between competing obligations and a program which offers an individualized format for the frequency and duration of engagement.

The second theme that emerged was the need for an individualized approach to personal support as a component of treatment. Participants commented on group support sessions and one-on-one supports. Darin, a 43 year-old man, had difficulty enrolling in treatment programs in Ottawa and Toronto. Emphasizing the personal issues associated with crack use, he was discouraged by the approach of many of the drug programs which incorporated group support sessions. He believed that individual's needs were so diverse that a group approach was simply not effective.

Darin explains:

I never liked the idea of sitting around in a group session. Everyone's reasons for doing crack or why they don't want to attempt [to] cease doing crack, are very unique. You can't put a bunch of people in a room and say we're going to treat you all. Treat the individual. I don't think Ottawa has anything like that.

Again highlighting the gap in treatment services in Ottawa, Darin identifies the absence of programs which aim to focus treatment on an individual level and their personal challenges with drug use.

Lucas who was not comfortable with the twelve-step approach to drug abstinence, identified that an individualized approach incorporating a consistent source of moral support would be most useful to him:

Well, one-on-one support, counselling, that would be...I'm not good in groups, I don't like groups. Outpatient program maybe, and since I wouldn't been involved in the outpatient twelve-step program, I'd need to be able to contact somebody that would be like....for spur of the moment things, so if something came up then I could contact them. Similar to a sponsor but not in a twelve-step program.

Although group-based support programs were not popular among these men, Erin, a 52 year-old woman, expressed her appreciation of low-threshold support services offered in Ottawa:

Erin: They were just that it was referred to me. It's like an AA meeting. There's people there and you talk about your drug use. Its support...like a support system for each other.

Kate: Has that been helpful?

Erin: I haven't been in awhile because like I said I'm trying to wean myself off by myself. But it's helpful, to be with people of the like, you know? They understand.

Interestingly, women participants reported more social support connections within their lives as compared with men in this sample. Whether it was roommates or family members, women participants in this sample seemed to be more supported by loved ones compared with the men in this sample. As such, a group format and open discussion support sessions may be more familiar to women and therefore a more accepted form of treatment, compared to the experiences of men. Regardless, this difference reinforces the overall theme of a need for individualized approaches to treatment.

A third issue which supports an individualized approach to treatment is that of treatment for individuals living with stigmatized diseases, including HIV. Living with an addiction to crack and HIV puts individuals in a situation to be dually stigmatized by healthcare providers as well as by other treatment participants. Treatment challenges arising as a result of an HIV-positive diagnosis was an issue brought forth by Lucas, a 44 year-old man living with HIV since 1986, infected as a result of injecting opiates with a previously used needle. Although his opiate use has ceased, he is still smoking crack a few times per month. "Lucas" highlighted an important issue to bear in mind for HIV-positive individuals seeking drug treatment:

Because it's hard to be put into a group of people who are not familiar with HIV and many of them, even other people who have addictions issues who are not HIV positive, aren't necessarily comfortable around people who are positive. You can always feel those vibes, when they're there. It doesn't lend to an open and honest discussion and support groups. When you have that issue, that elephant in the room always, it's hard for you to get on with your rehabilitation. You know what I mean?

Lucas goes on to explain a specific situation where his HIV seropositivity compounded the difficulty of completing an addiction treatment program. Stigma from other participants in the treatment program led to an unsupportive environment and made it difficult for him to focus exclusively on his treatment programs. He explains:

I had that problem when I went through the [name of hospital] rehab program in the halfway house for six months in Toronto. I was quite open, and for the most part, the guys in my core group, they were very understanding. I had no problems with them. It was the new people coming into the program. The people that I was hooked up with at first was a closed group and we reached about ten or eleven. The rehab halfway houses took in a maximum of twenty-five or thirty guys, so there'd be another group. And it was those outside people that we would have to mingle and be a part with, because we're living with them. There was some AIDS-phobia there. It's like, I was always worried about saying something out in the open, I always felt like I had to hide amongst those non-core people, outside of my group. And that was tough; it was hard to deal with your addictions issues when you have that elephant always hanging over you, in an in-house program. You

know what I mean? So, I think, because there's...I don't know and I don't have any statistics and it's just my opinion, but it's harder for an HIV-positive person to break their addictions habits than it is for somebody who's not HIV-positive.

Finally, a fourth theme emerged which addressed the need for appropriately tailored post-treatment supports. Jodi, a 30 year-old woman, related a very positive experience with an out-of-town drug treatment program but described the impact of a lack of post-treatment supports. Her experience highlights the importance of ongoing contact with treatment participants in order to respond to experiences that may have arisen during their time in the program. Jodi, a 30 year-old woman, had just been given leave from jail as she went into labour with her son during her incarceration. She explains the treatment program to which she was assigned during her leave:

Jodi: They had everything there, it was a great program. It was the [name of centre] in [name of Health Region]. It's called [name of program]. When I went there, the head girl who was also my worker, she was awesome, she rocked. It just got me a lot of hard work, because they make you focus on yourself and stuff. It was hard and very intense. But I had just had my baby so I got three visits a week to the hospital to see him. Then he had a UTI so I was back and forth from the hospital and rehab and going to these parenting programs. It was overwhelming. I ended up meeting my partner, my ex-partner now, and just got into a bunch of trouble after leaving treatment...then I relapsed and then I signed my son over for adoption.

Kate: That must have been very difficult. How long of a time period was that?

Jodi: It was six months. He was six months old. I signed him over because I relapsed and I didn't want any harm for him. I could've changed it all around, I could've. You know? But then I chose the other life, the partner and everything after [treatment], but I couldn't do it, I didn't know how.

Even when after-care is available it may not be sufficient to meet people's needs. Pierre, a 56 year-old man, had a treatment program that did provide post-treatment support systems however, the support did not feel adequate for him to sustain his drug abstinence. He describes two experiences following treatment programs; first his experience following an intensive residential treatment program in Montreal and

followed by a second experience, this time following engagement with a local treatment program:

The first program, it's at the lake, it's in the bush, there's nobody else – it's totally isolated from everything. After it, I went back to the transition house and you have to be in pairs when you go to town, you go out two by two. So me and this guy, we used to be work partners me and him, and we started working and it took two weeks. The first time, our boss, she was a woman, and she gave us the money and right away we went to get beer, and after beer we called the dealer. Easy like that. Even in Ottawa. I did that one on [name off] Street, I did that there for three months. I was clean for a couple of months but you still have to do meetings and stay with people that you met at the rehab. It's hard to...like, they said go to the meetings and you're going to meet people and exchange phone numbers for support, but it's not that easy. It didn't work.

Overall, there were four themes which emerged from the data which highlighted the importance of developing and providing individualized approaches to drug treatment services. First, the importance of recognizing competing obligations facing the participant, such as schooling or employment, is essential. The ability to provide an adaptable form of treatment that does not force the participant to choose between treatment and other commitments is needed otherwise this presents a barrier to enrolling with treatment. Second, the need to offer a variety of treatment formats is important, such as support group sessions as well as one-on-one support. Depending on their past experiences and their level of comfort discussing personal matters, providing a choice of either group or individual counseling sessions is ideal. Third, the need to develop treatment supports for individuals living with HIV. Facing stigma associated with both their addiction and their disease, individuals living with HIV may feel most comfortable in a treatment environment where their HIV status does not become a barrier to focusing on their addiction. Fourth, the final theme which emerged

was the need for individually tailored post-treatment supports. The need for supports which are sufficient to the participant after their time in treatment is important to giving them the confidence and support network to continue with their recovery.

3.4.5 Recommendations for Ideal Drug Treatment Programs

The ideas and recommendations for the ideal elements of a drug treatment program emerged from the data; participants described what they believed would be the ideal format for drug treatment programming in Ottawa. James, a 39 year-old man, believed there is an increased need for low-threshold drug treatment supports in the community. He explains:

[We need] more of a crack AA – like AA but for crack. Those kinds of programs... those are the only things that I know.

Although he was unsure if he would feel comfortable accessing that type of support, he did feel that the low-threshold nature made it more accessible and required less commitment on his behalf. Other participants described their ideal treatment program as being a residential treatment facility located in Ottawa. Felipe, a 56 year-old man, stressed the importance of community integration as part of his ideal program. For him, the personal interactions with community members were felt to be therapeutic and would provide exposure to individuals who were not dealing with addiction. Increasing the amount of positive encounters with other people was important to dealing with the emotional issues that are omnipresent during a treatment program. He explains:

Felipe: Probably should not [be] a closed therapy. But mix in with the community. Learn how to talk to other people. Swearing and bad language would be out of the question. And doing good deeds around you, at least once a day. And you come back home and you're right on it. You let your thoughts of crack go. You need to talk to, you talk to somebody. The next day you get up at seven and you shower and have your breakfast. Then you come back for snack. You tell me what you do, but be positive. Always keep positive thoughts.

Kate: So this would be a residential program?

Felipe: Yeah, it could be. And there would be peers. It's the peer support that would drive people. If the guy has two or three months of being like that every day, in three months there would be a change. And the change that it would

have, it would be big enough for him to notice but not enough for you to notice. But it would be his drive. And as soon as he finds the drive, now he goes faster. It's like a kid who learns to walk, it's the same thing. You will get strength in your good behaviour.

Felipe describes having peer support incorporated into the treatment program so that program staff can relate to what the participants are dealing with during their treatment. He describes the peer support as “driving” people so as they have a positive example and a role model of someone who has successfully ceased their drug use. This connection and support with others, community members and workers, is perceived to be essential in an ideal treatment program.

Cameron, a 36 year-old man, describes his ideal treatment program which would foster supportive relationships and emphasize a holistic approach to treatment:

It would be a house. It would be very warm and welcoming and there would be very sympathetic staff there. And I think you would probably have to separate people based on sex. Just a place of love and friendship and stuff to keep you busy all the time. I think it would have to be residential. Yeah to me that would be my dream thing. Say a fifteen person house for people that would really want to change their stuff. [...] I think holistic is the perfect word for it. You know you could go for everything from yoga to anything. Offer really good food, because that's one thing that people who use crack are really lacking. And when they do eat, it's like four bologna sandwiches on white bread or something like that. Yeah, it would be local but it would not be anywhere around the shelters because that would simply not work.

He speaks of a safe and sympathetic environment, a theme which emerged repeatedly as important aspects of a treatment program. The importance of location, which also emerged, is again spoken of by Cameron who identifies the importance of removing an individual from their usual environment. The emphasis on a holistic approach, which incorporates nutrition and physical well-being, enables participants to focus on their

treatment and not have to worry about visiting shelters for their meals and being exposed to the individuals and places which were most associated with their drug use.

Evan, a 63 year-old man, spent much time thinking of various aspects of his ideal treatment program. Similar to others, he identifies the importance of a safe place and sympathetic staff, but he also speaks of the need to have a substitution therapy for crack, similar to the role of methadone for opiate use. He explains:

You'd go in [to treatment] and just like heroin or something, you find a substitute that could kill it. Coming off of some drugs is worse than being on it. I mean I know people that have died when coming off of heroin. Same with alcohol. But yeah, the people would need to be brought down [from the crack] and they would need to be fed. They would need to learn all over again how to take care of themselves. And they have to have a safe environment and they have to have people who know what they're talking about. Whether they're ex-addicts or not, doesn't matter that's not the point. And they have to have a lot of empathy because if they can't relate, then they can't help. [There would be] two separate sections though, keep men and women separate. Otherwise you got the games going on between each other, especially when people start to get healthy and they start to think about other things besides trying to buy more crack or use their bodies to get crack. We call it rock actually. It would be good, if you could have a safe environment. I mean they'd have to meet together to have meetings and stuff but not be on the same side of the building all the time. They'd be safe from outside interference and maybe some kind involved in it that would teach them some kind of viable trade or skill that you could use now.

He also identifies particular aspects of therapy which would be ideal to incorporate as well as the importance of developing individual skill sets and interests:

Keep busy. A lot of art. It's surprising how much people can get into art. You could have a couple animals, like a dog and a cat.... Keep 'em busy. They have to do their own cooking. A group of them would have to do the cooking for the day and clean the cooking. You wouldn't have to hire an offsite cook. Pretty sure there'd be somebody in there who's been a chef at least once. All of us have cooked at some point. You've been around long enough then you know how to cook. You get a lot of young kids using now, and they're the ones you need to reach. And an outside area for sports or you could go out and get them memberships to the Y. Get them to the gym with weights and swimming, three times a week. Whoa – now that makes a difference.

Evan identified a number of aspects which were addressed by others. He highlights the importance of having empathetic staff members who would need to have an awareness and understanding of drug use. Elements that are common to all of these descriptions are the importance of having interpersonal support and a safe place to recover. A residential place which offers meals and housing provides treatment participants with the opportunity to avoid the shelters in Ottawa, which were strong triggers for drug use for many. Overall, the description of the ideal treatment programs further emphasizes the need to allow an approach to treatment which is individualized. This individualized option does not currently exist in Ottawa since there are no crack-specific programs; however, the development of a program should inherently feature adaptability and the recognition of the need for tailored approaches to treatment.

3.4.6 Summary of the Availability of Drug Treatment in Ottawa

Four themes emerged from the voices of participants in regards to crack-specific drug treatment options in Ottawa. The lack of available drug treatment options in Ottawa was highlighted by participants, particularly the lack of treatment programming specific to crack-using individuals. Some participants had experienced some form of drug treatment in the past, which led to the emergent theme of characteristics of compassion and supportive environments being essential for an effective and appropriate treatment program. For participants, accessing meals at shelters and communal locations is a daily occurrence. As a result, they are repeatedly exposed to the buying and selling of crack, which predominantly happens outside of the shelters. The emergent theme of removing an individual from their environment for drug treatment services however, may justify the placement of treatment in a different part of the city. Across participants, both structural and personal barriers prevent this population from seeking and successfully completing treatment, which needs to be addressed when designing and implementing a treatment program. The approach to such programs seems most successful when an individualized approach to treatment is encouraged. The ideal treatment program for this population appears to be one that not only allows for an individualized approach but also one that fosters supportive relationships between staff and clients and provides a safe environment for those dealing with addiction.

3.5 Crack -specific Harm Reduction Resources

The third section of interview results addresses the third research question regarding the current availability of crack-specific harm reduction program services in Ottawa and to determine gaps that exist in service provision. This question was deemed to be important through systematic review findings and the local relevance of this topic.

From the participants, four themes emerged regarding the crack-specific harm reduction resources which are most needed in Ottawa: i) the need for improved access to existing harm reduction services, ii) the need for an improved relationship with law enforcement, iii) the need for increased education through existing programming, and iv) the need for a safe place to smoke crack.

3.5.1 Need for Improved Access to Existing Harm Reduction Services

From participants, the difficulty in accessing crack-specific harm reduction supplies emerged as an important theme. Although programming of this nature exists in Ottawa, there are still challenges which prevent participants from utilizing the services and supplies to the greatest possible extent. Some participants face a shortage of supplies and have difficulty collecting supplies depending on the time of day, day of the week, or location in Ottawa. According to Holly, a 56 year-old woman:

There's no harm reduction around here. They need harm reduction more than you can fucking imagine around this city.

For Holly, the lack of available safer crack smoking supplies led to engagement in high-risk crack smoking behaviours, such as smoking with previously used stems. Although

she is aware of the risks of sharing, it is still something she practices in the absence of clean supplies.

Similarly, Oliver, a 24 year-old man, faced barriers in accessing supplies as a result of service operating hours:

After a certain time [of day] then you can't get anything from them, so how are you going to get supplies then! They should give out stuff all night, whenever people want them because the fewer people that have AIDS, then the less people that are going to catch it. You know what I mean?

The decreased availability of supplies during the weekend was shown to be particularly problematic for participants. For Celine, a 36 year-old woman, the limited accessibility during the week has led her to share stems when she is unable to collect new ones for herself. She explains:

Well, if mine got taken...like, some people borrow your stem and totally lose control and you're begging for it back but they're too stoned to recognize that it's yours. So then that's gone, or you break it, or its Saturday and you forgot to get your supplies. That's when I would borrow a stem.

Many women in this sample reported working in the sex trade, often as a result of their crack use. For these women however, the hours of availability of the fixed or mobile distribution sites were often not suitable to their schedules as many worked through the night and slept during the day. Presently, there are no fixed-site services which exist in the evenings in Ottawa. A mobile van provides access during the evenings but is still not ideal as services cease before midnight. Holly explains how the limited hours of service leads to unsafe smoking behaviours:

Holly: Everybody out there is passing the pipe back and forth. One little cut in the inside of someone's mouth, and someone has HIV or hep C or whatever. You know? Or herpes, it could be anything.

Kate: Are you able to get supplies when you need them?

Holly: Nope. Well, you can if you come to the [name of CHC] early enough. You can get them up to four o'clock here. But sometimes for me, I'm not getting out of bed until four. Then I have to call the van, and it all depends on what area they're going to be at if I want to walk that far. They'll tell you they're stopping at certain places.

Kate: So what do you do if you don't get new pipes?

Holly: I use other people's – that's what I'm saying.

For many of the sex trade workers in this sample, limited evening and weekend distribution of supplies led to increased occurrences of stem sharing. Aside from the mobile distribution site which has limited hours, there is often nowhere to access safer smoking supplies during the evenings and on the weekend, times when participants reported smoking most often.

For other participants, the available quantity of glass stems was an issue. According to current program guidelines in Ottawa, there is a five stem limit per individual per visit, which does not meet the needs of some clients. Some individuals feel that collecting five stems is adequate for personal use however; it poses a problem when collecting supplies for others. Fiona, a 49 year-old woman, has faced this problem:

Well, for me [the limit] is fine, but I live in a house with a bunch of girls. Sometimes they would like some stems too and some of them are too fucked up to go outside but they do need the stuff too. But I can't even pick them up stems or explain that it's for somebody else.

Holly, a 56 year-old woman, had a similar experience:

Yeah I'll use my friends and she'll use mine. There are eleven girls in that house and every one of them wants a crack pipe. So I'll walk in that door and the pipes are all gone within five seconds, then I don't even have one for myself. So I end up using all theirs again. All of mine. I've given them all to them because most of them are sick and can't get out of bed, and [the centre] won't give me any supplies that I can bring and give to other people.

Grant, a 35 year-old man, described how people try to stockpile supplies in a safe location in the event of needing supplies when the services were unavailable. This behaviour however, is a clear indicator that there is an overall lack of coverage of unused supplies in the city. Grant explains:

People will stock up on crack supplies for themselves but be really greedy and if someone out there needs help with clean equipment, they won't even give them a clean [stem]. It's like a sense of greed so they won't run out for themselves. It's really interesting.

According to participants, the majority of crack in Ottawa is bought and sold outside the three main shelters and were the primary locations where most participants in this sample purchased their drugs yet there is little to no harm reduction programming within the shelters. Of the three main shelters in Ottawa, one shelter provides limited access to new syringes and none provide access to safer crack smoking supplies. For some participants, this lack of harm reduction programming in shelters was problematic. Kurt, a 41 year-old male, explains:

I think it depends on where you go [for stems]. Like if you go to [name of CHC] or call the van, well everybody's knowledgeable about that. But they don't have it in the shelters at all. They give you socks, underwear, T-shirts and stuff like that, but they won't supply you with tools to go use crack.

For some individuals, the lack of access to safer smoking supplies at the shelters directly resulted in increased sharing of crack stems in those areas. This was the case for Bruce, a 28 year-old man:

Well, I don't normally lend my own stem but if I do then I'll share it with friends every now and then there, but I don't usually share it. But yeah, when I buy my piece [of crack] downtown, I'll just borrow one at the [name of shelter] buying it and I smoke it and leave.

The reluctance of the shelters to implement a complete Needle and Syringe Program (NSP) is based mostly on their funding sources, which do not support the principle of

harm reduction. One shelter has a one-for-one NSP, which means that residents can collect one syringe, only if they return one. This practice is against the recommendations of the Best Practice Recommendations for Ontario NSP's which explains that an NSP is most effective when there is no limit on syringe collection and when individuals do not need to exchange supplies (277). Oliver, a 24 year-old man, highlights a major flaw with this approach:

I don't agree with handing in one needle to get another needle because people are picking them up off the ground and shit.

The resistance to increase syringe access among the shelters is a discouraging indicator of their potential willingness to eventually incorporate crack-specific harm reduction supplies. None of the shelters are currently working towards incorporating safer smoking supplies in their facilities.

The reluctance to incorporate safer smoking supplies is also present at a women's transitional housing unit in Ottawa, a house which identifies as a "harm reduction house" for women who are actively using drugs and concurrently facing legal, housing, or mental health challenges. Even within this harm reduction house, there is a refusal to provide safer smoking supplies. Fiona, a 49 year-old current resident of the house, explains:

They have just needles. And even at [name of] house, all they have is needles. If they're going to have needles, why don't they have crack pipes? You know? It's just...I just can't comprehend that part. We all smoke crack.

Poor integration of safer smoking supplies at these residential locations, which serve as a home to many individuals who use crack, are severely limiting the opportunity to provide individuals with needed harm reduction supplies and information. The absence

of clean stems in these areas is leading to increased sharing among people who smoke crack. This gap in services indicates an opportunity for intervention with this population and should be acknowledged by the shelters and their respective funding bodies. If the provision of crack-specific harm reduction at shelters is not an option in the short-term, increased partnering with existing programming at the CHCs and community agencies should take place to allow for increased access to much needed supplies.

The need for improved access to existing harm reduction services in Ottawa arose as an important theme from participants. The current operating hours of the safer inhalation program is not suitable to many of the participants, particularly those who faced limited or no access during the evening or weekends, which are the times when individuals are primarily smoking crack. For sex trade workers, the lack of access to supplies during times when they are working is problematic and creates a structural barrier when they are trying to actively protect themselves while working. The limit on the quantity of stem collection is a problem for participants who collect stems for themselves and on behalf of others; this limit is preventing users from increasing harm reducing behaviours among those that they smoke with most often. The complete lack of crack-specific harm reduction in any of the shelters and in the women's transitional harm reduction house is directly leading to increased sharing of stems as reported by the participants. There is an urgent need to upscale the availability of harm reduction supplies, particularly in areas immediately surrounding the shelters and the downtown core of Ottawa.

3.5.2 Need for Improved Relationship with Law Enforcement

A second theme which arose from participants was the strained relationship between local police and individuals who access harm reduction services. Ottawa has a tension-filled past in relation to harm reduction initiatives due to the reaction of local law enforcement and political representatives. For some participants, the attitude of the police towards harm reduction supplies has resulted in a decreased willingness to collect or carry clean smoking or injection supplies. As a result, this places a large proportion of users at increased risk for sharing drug use equipment as they are unwilling to carry their own personal supplies. This approach from the police has jeopardized crack-specific harm reduction initiatives in the city of Ottawa and has rendered existing programming less effective.

The fear of being caught with a crack stem by police was reported as a primary reason for smoking with previously used supplies. According to some participants, crack use had led to increased discrimination from police compared to opiate use. The stigma and the police's enforcement of crack-specific harm reduction supplies resulted in increased engagement in higher-risk smoking behaviors. Bruce, a 28 year-old man, explains:

I don't usually carry my own stems or anything. When I was doing crack on a more regular basis and I was panhandling, all the cops knew me. They actually didn't mind the fact that before I used to panhandle for opiates. I think they realize that you get severely ill without [opiates] so they kind of left me alone on that front. But, if they would have found me with a crack pipe...they do not like crack users at all, so for me that was the reason to share. I was on good terms with them and I wanted to keep it that way. I didn't really expect for things to stay that way if they found me with a crack pipe all caked with resin in my pocket.

Although the police have made harm reduction programming difficult to fully implement in Ottawa, health initiatives targeted at those who use crack have received the most criticism. The differential response from the police towards opiate users and crack users is creating a disproportionate level of risk for those using crack as crack users are less willing to carry their own clean supplies. Bruce explains:

I've met and known a lot of people on probation especially and they will absolutely not carry stems, they won't even carry syringes on them.... But even people that aren't on probation won't carry anything for crack; they just don't want to get caught with a stem. They don't care if they get caught with needles 'cause they can just say they're morphine users and the cops tend to have more respect for people that use morphine than crack users.

Not only are individuals less willing to carry their own supplies, but those who choose to access services are often not able to use the stems they collect. Individuals who make the effort to collect safer smoking supplies are often discouraged by the police response to the programming and may be less likely to access programming again. Fiona, a 49 year-old woman, has had her new, unused stems confiscated from her by police:

Yeah, they always take your stems. Clean and dirty. Take them and smash them. Clean ones too. They take them and they smash them.

Some individuals expressed that once an officer confiscates clean or used safer smoking supplies, that an individual is more likely to be targeted in a search again and therefore may mean they are less likely to collect crack-specific harm reduction supplies in the future.

Darin, a 43 year-old man, tries to use his own stems as often as possible but as a result, is always trying to keep them hidden from police. Since he primarily uses outside, he often worries about hiding his stem right after he uses it, which for him has resulted in

minor burns covering one of his hands. While striving to not share stems and protect himself from disease transmission, carrying his own stems results in other health concerns. He explains:

I can see [the police] driving by, and yeah – it makes me nervous. Of course it makes me nervous....I've burned my hands. If I see them... it'll burn then I'll [lick my hand] then grab the stem to cool it off. I have callouses and burns all on this hand from hiding it. But yeah, I've learned not to show them the stems at all.

Mary, a 43 year-old woman who works in the sex trade, is also fearful of carrying crack smoking supplies, even if they are unused, due to the police presence. For the sex workers in Ottawa, they report decreased access to the safer inhalation supplies in Ottawa as there is limited availability during the evenings when most of them are working and using crack. Not only do they face more difficulty collecting the supplies, but the police presence dissuades them from carrying personal, clean supplies with them. As a result, it makes it increasingly more difficult for this population to take measures to protect themselves from drug-related risks. Mary explains:

Us girls, we thought we were all safe on the street. Oh yeah, we all thought we were safe with just crack pipes. But now...now you see us get busted with crack pipes with nothing even in them. For me, I'll only keep one pipe on me...maybe. Never ever do I want four or five pipes on me. I'll maybe only have one at a time, if that anymore.

Women who have been found by police to have crack stems on them feel that they would not seek security from the police based on their previous interactions. Isabelle, a 25 year-old woman, explains:

I've seen [the police] rough girls around and take their stems then tease them with their drugs. They hold it in front of them and flash it in their face, and then they take it themselves. They take their drugs and money and pocket it.

For Mary, the stigma associated with smoking crack and the reaction from law enforcement not only meant that she did not carry stems, but she no longer considered

the police an option for safety. When speaking about her sex work, she explained that she would not seek help from the police if she had a bad date because they knew she smoked crack and accessed harm reduction supplies. She explains:

The [police] are just not there for us. Once you're homeless and you're written off as a homeless person or a user, then they don't look at us like they should protect us. Some of the shit they put us through is awful. They say they care, and you might get one out of ten that do, you might get the odd one, I don't know. But no, I would not go to the cops. I would not go to an officer for help.

Fiona, a 49 year-old woman had a similar experience:

The [police] are terrible, they think we're scum. They chase us and chase people out, and they beat them. Take their token, the stem, take their money and arrest them.

Law enforcement will always be a factor in drug using communities, particularly since the drug using behaviours are illegal according to Canadian law. However, there exists an opportunity for improving the interpersonal relationships between officers and the individuals who use drugs. Increased awareness of addiction may lessen stigma towards this population and may allow for police to focus their efforts on lessening the harms for this population, rather than creating anxiety from carrying harm reducing drug-related supplies. Oliver, a 24 year-old man, describes how the current police approach is ineffective and offers an idea for improvement:

I think [the police] just got to start...somebody in a higher position has got to...I don't know. I don't think they give a fuck. I think they've got to start hiring special people with special skills to work with people down in this area. In this area, I think that the police should have certain skills in order to get a job as a police officer. Social skills, fucking psychology, some real skills you know? Like drug addiction work. They have to have some sort of skills to be a police officer in the downtown area. They're picking these big fucking assholes which have zero tolerance and shit, which is a big mistake. It's a big mistake, 'cause a lot of the people down here aren't bad people, they're just drug addicts.

The suggestion made by Oliver to increase police training and awareness around addiction may be helpful in lessening the stigma associated with drug use in Ottawa. If nothing else, increased support of the existing harm reduction programming would greatly benefit individuals who are accessing the services.

Currently, the police are creating barriers for those who are trying to reduce the harms associated with their drug use. The stigma directed at those who use crack is discouraging individuals from carrying their own supplies and therefore is causing an increase in sharing among some participants. For those who are collecting new supplies, there is a fear of confiscation by police and subsequent concern for seeking supplies in the future. Particularly interesting from these participants is that the police are not a point of safety for them, even when sex workers are facing violence. The current attitude of the police towards those who use crack is putting individuals in jeopardy for increasing the harm related to their drug use as well as risks from outside influences. There is an urgent need to address the police response to crack-specific harm reduction programming to ensure that the current provision of services can be done most effectively.

3.5.3 Need for Increased Education through Existing Programming

A well-delivered harm reduction program is one that not only provides access to safer drug use supplies but also provides an opportunity for intervention and education. One of the primary purposes of harm reduction initiatives is to provide an opportunity for interaction between a drug user and a healthcare provider, such as a nurse or trained outreach worker. It is these interactions which serve as a point of knowledge transfer and educate the client on drug-related risks. With crack smoking, harm reduction programming exists to reduce the possibility of HIV and HCV transmission through shared smoking devices.

A theme that emerged from the data was the need for an enhanced educational component to programming. The need for increased education was not identified directly by participants but arose from their perspectives on sharing and perceptions of risk. Some participants seemed to be unaware of any risks associated with sharing crack smoking supplies. Kurt, a 41 year-old man, had not heard of any risks associated with sharing:

Stems? No. I know about the needles. But not stems....One thing that I won't share though is my beer. Anything in a cup or a bottle. I've been born like that. To me, smoking is....it's not like you're drinking out of somebody's beer....it's not the backwash. It's different.

For Kurt, his concern over sharing drinks but not about sharing stems is concerning. Kurt regularly collects his crack smoking supplies from CHCs and mobile sites, which indicates there are missed opportunities for education and teaching. Some participants

had an inaccurate perception of disease transmission risks as they based this on the physical appearance of someone. Bruce, a 28 year-old man, gives his perspective:

I've never been...I mean obviously if the guy has split open lips with dried blood all over his lips then I'm not gonna borrow his stem. But yeah, otherwise, it's fine.

Participants were knowledgeable about some disease transmission risks associated with sharing stems. However, their level of knowledge varied and most perceived they were at far less risk of disease transmission than the evidence would suggest. Kim, a 48 year-old woman, elected to not use the latex mouthpieces when sharing, although their purpose is to decrease transmission risks in the event of sharing glass stems. For Kim, the visual appearance was an appropriate measure of whether she was comfortable sharing her supplies. She explains:

Kate: So when you share your stems, do you use mouthpieces?

Kim: No, no. But you know, like, I've said "No" to people that have sores or cold sores on their mouth, then I'll say no.

Kate: So you're comfortable sharing with someone if...

Kim: As long as it looks like they've been taking care of themselves. But I find with most people, it might just be because they just came down. There's lot of people [that] just come down and they get the first piece of crack and they want to smoke it right away. It's like they've been waiting all month or six months....but then they don't have their own. Sometimes, they just want the hit right away, so what do you do?

The exclusive reliance on visual cues as an indicator of transmission risk was a common misconception among participants. Although many acknowledged the role that open sores played in the transmission of disease, most participants did not consider open sores that were not visible and were located on the inside of the lips and mouth area.

Dawn, a 44 year-old woman, also relied on visual cues to determine her level of perceived risk but also believed she was not at risk of transmission of HIV as she did

not believe she knew anyone living with HIV. Dawn's personal understanding of transmission risk indicates the need for increased knowledge transfer during visits to harm reduction sites:

Kate: Do you ever worry about transmitting diseases through sharing stems?

Dawn: Hepatitis, yeah.

Kate: Is that enough to make you not share?

Dawn: No, because I tried it out. And I've smoked with someone with hepatitis and I never got hepatitis. I know that's not smart and it's not cool, but I consider myself pretty lucky.

Kate: What about HIV, is that ever a concern for you with stems?

Dawn: No, I don't think anyone I know has HIV. But, if I see blood I'm not going to share blood with them. I'll borrow from someone that has a cracked lip, but not blood. Cracked lips are not always bleeding.

Many participants believed they were not personally at risk for HIV transmission because they felt that all of their peers would have self-disclosed their HIV status to them. This indicates a need for education on this issue as not all those living with HIV will voluntarily disclose their positive status as they believe it's a personal health matter and may not be willing to share this information. Furthermore, an individual may not necessarily be aware of their personal HIV status. As a result however, peers of those infected may be at risk so need to practice safe sharing practices all of the time, not only with those who have disclosed. Brooke, a 39 year-old woman, explains her decision-making relating to sharing:

Kate: Would you take a pipe from someone after they've used it?

Brooke: Yeah, some people. I mean the ones that don't have HIV, or that I think don't have HIV.

Kate: When you say you don't think they have HIV, what does that mean?

Brooke: 'Cause I know that everyone around me, the people that do have it, they've all told me. So I mean if they really have it then I think they'd tell me, 'cause I'm pretty cool with it. I mean it scares the shit right out of me and stuff, but I get really pissed off when people judge people that have it. You know?

James, a 39 year-old man, is not concerned about disease transmission as he and his peers are all living with HCV. There is no mention however, of the risks of HIV transmission:

The people that I do share with have hep C too and they're aware of it, so they figure that the risk is minimal too. And it's pretty much about the high, right?

Cameron, a 36 year-old man, is personally aware of the risks associated with sharing stems in order to get a 'push', the resin which remains in a stem after it has been used for smoking crack. However, he highlights an area which may require increased awareness among other users:

The big thing in the crack scene is the 'pushes', which I'm sure you're aware of. People go to great lengths to even get that. And that's the problem on the street. When somebody runs out of crack, then they'll give their pipe to somebody else [to use] in order to get that push, that residue. And I think that potentially leads to a lot of different things. MRSA, hep C, hep B possibly.

A need emerged for education among a particular sub-group of participants, those who were living with HIV or HCV. New infections of HIV and HCV as a result of sharing crack smoking devices may occur from a lack of awareness of transmission risks. For effective harm reduction messaging, it is not only necessary to educate those who are at risk for transmission, but also those who are living with HIV or HCV and therefore capable of passing on the infection to others. For Bruce, he believes the risk of oral transmission of HCV is minimal as it is not commonly sexually transmitted:

Kate: Are you concerned about passing on your hep C to anyone when you share your pipe?

Bruce: Nah, unless my lips are really bleeding. I mean, my girlfriend can't get [hep C] from having unprotected sex with me or anything, so it's cool.

For some participants, education was just one component necessary to changing their sharing behaviours. Felipe, a 56 year-old man, explains his experience:

Felipe: I use [mouthpieces] once in awhile but not in the long term. It would be...I could use it for ten minutes out of the evening. So it is something that I would use but...I know the dangers of sharing pipes and the dangers of collecting blood or little cuts for hep C but that never bothered me.

Kate: Why is that?

Felipe: Because when my diagnosis of HIV and hep C fell on me twenty years ago, I didn't give a shit too much. And I'm sorry to say that but I'm only just now starting to care about other people.

Interestingly, some participants did alter their sharing behaviours as a result of a HIV diagnosis, an indicator that appropriate knowledge transfer may have taken place and was well received by the participant. Oraleigh, a 38 year-old woman living with HIV, is aware of the risks associated with sharing a stem and has modified her smoking behaviours accordingly. Her source of this education however, is important to note and indicates that a lot of health information is learned by knowledge transfer between peers. Oraleigh explains:

Oraleigh: Yeah, I'm less likely to give the pipe to someone because I have HIV. Even though it's undetectable now, you can still catch a lot of stuff. Even mono or anything. That's why the [mouthpieces] came out.

Kate: Where did you originally get that information about pipes and disease transmission?

Oraleigh: I don't remember. I think just around the streets though. Just from sharing information with other people.

Gwyn, a 42 year-old woman, is personally aware of the risks of transmitting her HCV infection however, she acknowledges that she will still share her stem if another person needs one:

Kate: You said you think you got [hep C] from the crack pipes, can you tell me about that?

Gwyn: Well, from the sharing. When you take someone else's pipe, the thing is that with hep C, the blood is alive for two weeks. It doesn't even matter; you might not be able to see it. But especially mouth-to-mouth. And with the other girls, most of the rest of them have hep C. I don't remember how I got it or from who. I don't know.

Kate: Do you share your pipes now?

Gwyn: Yeah if they need them. I mean, what am I gonna say?

Gwyn's knowledge of risk transmission is important but the sharing behaviour itself is still problematic and links back to the earlier points surrounding accessibility of supplies. The theme emerging from the participants clearly indicates that the behaviour of sharing can only be reduced if both components of the intervention, education and sufficient harm reduction supplies, are easily accessible and free of stigma. The impact of the educational component to reduce harms will only be effective if there are sufficient supplies available so that people can practice safer smoking practices.

Similarly, Lily, a 50 year-old woman, who was diagnosed with HCV the day prior to her interview, makes a statement which captures the need to have sufficient amounts of harm reduction education and crack using supplies:

Kate: Were you surprised by your recent hep C diagnosis?

Lily: No, because when you're stoned, you're sharing stems. I even went to courses on it and stuff. But, really, when you want that puff, [sharing] doesn't matter.

When assessing the education component of existing harm reduction programming, it appears that there is an opportunity to increase knowledge transfer opportunities at both fixed and mobile distribution sites in the city. The gap in knowledge transfer is evident from the conclusions drawn about disease transmission by participants which results in an inaccurate perception of risk. Currently, many individuals are not concerned about sharing to the point where they will alter their behaviours through reducing sharing or increasing the use of provided mouthpieces. Sharing a stem that contains crack or resin is demonstrated to be a bigger priority than protecting oneself from disease transmission. As well, it is evident that there is a need to increase

education efforts towards those who are already infected and still engaging in high-risk sharing practices. Encouragingly, there is evidence of behavior change among some individuals which demonstrates that this population is receptive to the harm reduction information as long as it's delivered consistently and in a manner that leads individuals to perceive this change is beneficial and respectful.

3.5.4 Need for a Safer Place to Smoke Crack

When discussing harm reduction in Ottawa, a main theme that emerged from the participants was the need for a safe place in which to smoke crack. When discussing the gaps they faced with harm reduction services in Ottawa, many participants believed that there was a need for a Supervised Consumption Facility (SCF) in the city. Participants spoke of both individual- and community-based reasons which necessitated such a facility in Ottawa.

Participants identified a number of individual-based reasons why a SCF would be useful for those who smoke crack, reasons ranging from health service access, immediate safety while using, and the need for a safe place based on housing situations. Darin, a 43 year-old man, identified a need for an SCF to provide a safe and sanitary option for those who smoke crack. He emphasizes the need for a civilized approach to drug use which also provides an opportunity for connecting drug users with needed health services. He explains:

Darin: We need to have a safe smoking site so that people don't have to huddle in the filth or in corners. Or hide in people's garages or stairwells, alcoves... It would be somewhere where the air circulates somewhere else obviously. You could be calm. Maybe have a coffee or a drink in the next room. It's a lot more civilized than this. I mean, we're a civilized society.

Kate: What do you think should be in there?

Darin: Health services, in the same building. Health services with counselling for sure. Say somebody does a blast and they get a bad hit, or they come down and they really start thinking they want to get off the drug, then there should be somebody there that says, "We'll introduce you to these people."

For some participants, smoking or injecting drugs outside was a perceived threat to their personal safety. Since drug use, either injecting or smoking, comes with risks

particularly when using outside in unsanitary conditions. Fiona, a 49 year-old woman, is always rushing to use her drugs because she is worried about being seen or caught.

She explains:

It's because...Say you're using, if [the police] are gonna come up and catch me. Say you're injecting and you have a needle in your arm and somebody catches you off guard, holy shit – it can be serious. Even smoking, it's really serious.

The absence of a safe place to use crack posed threats to the participants' housing, their personal privacy and their safety from violence. Kurt, a 41 year-old man who is a daily user of crack cocaine, relied on Ottawa shelters for a place to stay. Previously, he had been asked to leave a local shelter when he was found to be using crack inside during the winter months, which resulted in him resorting to couch surfing for the next few weeks. He explains the shelter's response to his crack use:

I got booted out for a few weeks or a month when I got caught using. Well, depending on the circumstances of the drug. For crack, they're not tolerant of that at all, but if its weed or something if you get caught with that, they'll just chuck it in the garbage. But for crack, yeah. They might call the police too sometimes because it's more of a high-end drug. It's like LSD or acid or whatever. It's more potent, it's a killer. Then you have to leave.

Those who smoke crack may have chaotic lifestyles which may lead to unstable housing and a reliance on the shelter system or results in staying on the streets. When individuals perceive they have nowhere to safely use outside and they smoke within the shelters, they lose their place to stay and may incur a ban which prevents them from staying at that shelter in the future.

For many individuals, a "safe place to use" also meant a place that was safe from stigma-related treatment by the police. Oliver, a 24 year-old man, believed police cooperation would be necessary for individuals to feel comfortable seeking out the

services of a supervised site and that a police presence may deter potential clients from accessing the facility. He explains:

[A place to use] would be good but there would have to be a law though that the cops can't wait out front of the facility. They'd have to be a block or two away. They couldn't just wait [there] and stop you outside the facility for using. There'd have to be some sort of law like that, you know? That's a safe spot where you can go and use quietly and safely.

In addition to the personal reasons cited for accessing an SCF, participants also cited community-based reasons for needing a safe place to use. Community-based reasons are those which arose from participants and identified the well-being of the greater Ottawa community. Three different forms of community reasons arose from participants: i) the need to decrease public disturbances, ii) the need to decrease public drug use, and iii) the need to reduce publically discarded drug use supplies.

Some participants identified that a supervised site would decrease public disturbances related to crack use in the community. Hank, a 53 year-old man, explains:

The community shouldn't have to see people walking around the street at three in the morning or one guy screaming at another because he got ripped off. It would be indoors. It would be supervised. You have coffee houses and people go to drink coffee. It's not really all that different. People are worried that it's going to turn into an opium den like back in the early 1800s. But I don't think so. We're a civilized society and I think there should be a mechanism for safer smoking.

Interestingly, Hank echoes a comment made earlier by Darin in that providing a supervised site to use is appropriate as we live in a "civilized society."

Participants not only identified the need to decrease disturbances related to drug use, but also a need to reduce the amount of drugs which are publically consumed in plain

sight of the general population. Many participants felt this way as they believe the general population did not want to see drug use in their community. Fiona, a 49 year-old woman, explains:

Just look out your window and all you see are two people hovered in a corner, smoking a pipe. It's everywhere you go, you see it. And a lot of people are misinformed about us. A lot of people think we're going to jump out and grab you, and this, that and the other. I mean it is true in a sense, but not everybody. It's not all of us, but it should be inside at least.

Public drug use may result in drug use supplies being discarded on the streets and in public locations, for a variety of reasons such as lack of an unsafe place to discard, fear of police while carrying supplies, and a decreased consideration for disposal when high. Some participants believe that providing a safer place to use crack would decrease the amount of publically discarded drug smoking supplies. Isabelle, a 25 year-old woman, explains:

[A SCF] would take people off the street and take dirty stems and needles off the street. I'm looking at getting a job right now picking up the dirty syringes off the street 'cause there's so much. With a safe place [though], there'd be less stuff out in public and they'd be able to watch it and study it more.

Oraleigh, a 38 year-old woman, also believes there is a public safety concern regarding both publically discarded supplies as well as the open drug use in Ottawa:

Yeah, well it's really all about safety again. With needles and stems, it's just all the equipment on the ground. If they were to open something up for us to use in, I think it should be for needles too. I guess something should be opened for crack and [needles] because people smoke outside and the kids see that and none of that is good for the kids see.

Some participants also identified that the current provision of harm reduction services is incomplete with a safe place to use, often as a result of police behaviours. Participants felt that there is a need for an SCF so that crack users may properly use the harm

reduction supplies which are distributed by the city. Lily, a 50 year-old woman, explains:

What's missing is...a place to do it. Whereas, you know, if the health centres can give out the stems, and they should have a place to do it, because the police stop you and even if it's not used or anything, they'll break it. They think it's our fault. But it's the government that's giving it out, so they should have a place for people to do their thing. Go in and maybe get your own little locker and you get your stuff. Not be an idiot about it, but have a safe place to do it.

In discussing the need for a safe place to use drugs, participants spoke of particular ideal aspects of a facility and provided insights or recommendations for a local SCF. When considering what exactly is needed to provide a safe place to use, some participants identified the supervised injection facility in Vancouver as an ideal model for Ottawa. Although the Insite model may not necessarily be a model that works in other cities, it is the format with which users in this sample were most familiar as all had either heard of or visited Insite. Celine, a 36 year-old woman, describes her thought process when looking for a place to use in Ottawa:

Every time I'm downtown and I work, I panhandle and I bum change to get my toke, I sit there for a fucking long, long time thinking, where can I smoke this? Where can I smoke this? Every weekend it's like that. And sometimes I wish I was in Vancouver where they have those smoke houses! Those cool, nifty smoke houses! Something like that would really benefit me, I don't know about anyone else, but I would use them in a minute.

Most participants focused their ideal descriptions on the health-related aspects of the facility, such as the need to connect with harm reduction or drug treatment services, or having staff available to respond to overdoses and adverse health outcomes. Holly, a 56 year-old woman, describes how she envisions an ideal supervised consumption facility in Ottawa:

It would be a centre for people that use crack. You would walk in and it would be a room and there'd be a nurse there in case...so nobody OD's. Or somebody that knows CPR and stuff like that, who knows what to do if you overdose. Like a nurse or something. And it would be just a room where they supply the crack pipes. Where they make sure they change them all the time so there's no infection all the time. Did you know right now, you have to call someone to get a crack pipe? Or you can only get a pipe here at certain times? At this place they'd be available 24 hours a day. And you'd know that if you walk in, no cops are gonna walk in and bust you. Just let them smoke their dope and go on their way. Sit and have a coffee or a cup of soup or something.

Holly addresses many elements in her ideal description, particularly overdose prevention, 24-hour access to clean supplies, and safety from the police. Although a fatal overdose from crack is uncommon (259), there is a more common risk of non-fatal overdoses which still require medical intervention and often reliance on emergency services. Isabelle, a 25 year-old woman, emphasizes the preferences for clinic-like facility:

I think everything should be like a doctor's office. Basically, everything is sterilized and available. If you were to OD then you would have someone that's there to help you on the spot. They wouldn't necessarily be in the same room, but they could be where they could watch you with two-way mirrors or something. You'd smoke in your own little room. If you want, you could bring a friend. I wouldn't have it where you have a bunch of people in one room or anything, you don't need that.

For existing supervised consumption facilities, different guidelines exist regarding the rules surrounding the use of injecting drugs compared to smoking drugs (253). Participants acknowledged that injection and smoking behaviours differ in terms of the frequency of use. Darin, a 44 year-old man, explains his ideal approach for smoking:

I think you'd probably get a set amount of time [inside]. I would say you can't actually deal [drugs] in the building but maybe have booths, like an internet café. You can sit down and your stuff goes there with you. Or maybe you can look over at the other guy and chat with him or whatever, but yeah, you'd have a set amount of time there.

Similar to Darin, other participants believed that drug use should be permitted in a facility but the buying and selling of drugs should not. Dawn, a 44 year-old woman, explains:

There would just be chairs and tables there and it would be a place to go smoke crack. Once you have your own crack to smoke, then you could go there. But you can't sell there, just use.

Interestingly, participants who were more stably housed didn't feel the same urgent need for a facility as they felt comfortable using inside their own home rather than outside. However, these participants did identify the need for a facility for their peers who relied on the shelters for housing or who primarily stayed on the streets. Erin, a 52 year-old stably housed woman, explains:

Erin: Well I would want something that's comfortable, home-y, where you can visit. An open house, open to all the users.

Kate: Would you go to use there?

Erin: For me personally, no. I wouldn't need to. But for people who need that space, yeah I think so. Have chairs and couches, some tables. A little kitchen so you can have something to eat. Get a coffee. Just be relaxed, have the environment be at least semi-healthy. So you don't have to be in a back alley and smoking up outside. That's not good or safe.

When describing an ideal location for a supervised consumption facility, participants described a need to situate the facility in the area with the highest degree of drug use. As heard earlier, the drug use in downtown Ottawa is mostly centralized around three local shelters. As a result, participants identified a need to respond to that trend with an appropriate intervention. Celine, a 36 year-old woman, explains:

It should be near the [name of shelter] because that's where everyone gets their dope. I mean I'm not going to catch the bus from across town to take a little toke, I don't think that would be very fun But I MIGHT, 'cause that's how painfully annoying it is to do your thing down here. Just smoking outside of the shelters with

everyone around...it's so windy, it's so cold, and you're out in the middle of the sidewalks for frig's sake!

Overall, almost all participants identified the need for a safe place to use crack in Ottawa and cited a number of individual- and community-based reasons. Participants indicated that there were individual-based reasons for needing a safe place to use crack including: a need to use drugs in a sanitary location, increased opportunities to connect with healthcare services, a place to use away from the shelters, and safety from the police. Participants also cited community-based reasons which included the need to decrease public disturbances, the need to decrease public drug use, and the need to reduce the number of stems discarded on the streets.

3.5.5 Summary of Crack-specific Harm Reduction in Ottawa

The themes regarding healthcare experiences in Ottawa emerged from the analysis of the participants voices. Regarding existing crack-specific harm reduction services in Ottawa, clients are currently facing difficulty accessing services during the evenings and on weekends when distribution is limited. The collection of supplies by peers is hampered by the limit on the quantity of stems which may be collected by an individual person. Based on the voices of participants and the current sharing behaviours in which they engage, there is a need to increase the educational component of the existing harm reduction services. There is a need to provide consistent and accurate information to clients as well as relying on the peer networks of knowledge transfer. One of the largest threats to the effectiveness of these programs is the reaction from local law enforcement towards individuals who use crack. Police appear to be acting in a manner which makes accessing and carrying clean crack smoking supplies difficult and stressful for clients. There is a need to improve the relationship between the drug using community and local law enforcement. Overall, participants almost unanimously reported the need for a safe place to smoke crack in Ottawa. Many believed that Ottawa would benefit for a Supervised Consumption Facility which would serve to increase referrals to healthcare services and drug treatment programs. Individuals expressed the need to have an indoor, safe place to use their drugs which would reduce the personal and population level risks associated with crack smoking.

4.0 DISCUSSION AND CONCLUSIONS

This Master's thesis was undertaken to better understand the risks and behaviours associated with smoking crack cocaine and to assess the healthcare, drug treatment, and harm reduction needs among this population. This research project reports on the experiences of accessing healthcare by this population and reports on the opportunities for intervention which exist, including drug treatment programming and harm reduction initiatives. This final chapter will serve to address the third research objective by synthesizing and discussing the findings from both the systematic review and participant interviews.

4.1 The Purpose of Research

To comprehensively assess the risk profile of individuals who smoke crack, a systematic review was undertaken of 147 published articles which addressed drug using behaviours or health-related issues among people who smoke crack. The evidence was synthesized and presented in a descriptive format. To the best of my knowledge, work of this nature has not previously been done to synthesize the literature on this body of work. Four research questions were developed prior to conducting the systematic review and responses were framed to these questions based on the findings from the review.

Following the completion of the systematic review, thirty qualitative interviews were carried out with women and men who live in Ottawa who are active users of crack

cocaine. This systematic review synthesized Canadian and international harm reduction and healthcare-related literature in order to provide the most accurate and relevant context for these interviews.

The purpose of the individual interviews was to explore the healthcare and harm reduction needs of individuals living in Ottawa who smoke crack. Three research questions were developed prior to conducting interviews and the emergent themes as brought forth by participants were analyzed and presented in order to frame a response to each of the three research questions. Areas of interest for individual interviews were informed from the evidence synthesized from the systematic review as well as emerging themes from the interview process.

4.2 Methodological Considerations

4.2.1 Limitations and Challenges

This study has a number of limitations. First, the sample size for individual interviews for this project was limited by both financial and time constraints. Sample size was not predefined at the outset of the process, which is consistent with qualitative methodology, instead it evolved on the basis of emergent themes. The final sample size of thirty participants enabled all initial research questions to be answered however, the emergence of sub-themes within those objectives could have further been explored without the imposed constraints surrounding sample size.

Second, the ethnic and cultural diversity of this sample is limited. Based on the published literature, there is a need to seek the perspectives of individuals who represent a range of ethnicities, particularly African American and Aboriginal individuals. Recruiting an ethnically diverse sample was found to be particularly challenging for the peer recruiters. As a result, conclusions or recommendations made on the basis of culturally appropriate programming or services cannot be made by this project and may limit its generalizability to other individuals who smoke crack and represent a different ethnic demographic. As well, interviews were conducted only in English therefore the unique perspectives of French-only speaking individuals in Ottawa who smoke crack may not be completely represented by this piece of research. The generalizability of these findings outside of Ottawa is also limited as each community and municipality is unique with regards to service provision and community dynamics.

Third, every effort was made to provide a neutral and non-judgmental environment between participants and myself during the individual interviews. Despite this, social desirability bias may have been present during discussions and may have resulted in participants feeling hesitant to acknowledge risk-taking behaviours associated with their drug use. If social desirability bias were present, it is anticipated that the risk behaviours described as well as disease serostatus may be underrepresented.

Finally, the broad inclusion criteria for the systematic review enabled the development of a comprehensive literature synthesis however, this did not permit for the comparison of study and participant characteristics in tabular form, as is most commonly seen with systematic reviews. The large variability in report type, data collected, and method of presentation made it extremely difficult to provide a comparison in this format. Although this is a limitation, it is not perceived to detract from the overall methodology, findings, or conclusion of the review.

4.2.2 Strengths

Despite methodological limitations within this project, this study demonstrated a number of strengths which contributed to the robust presentation of evidence. First, to the best of my knowledge, this is the first study to undertake a review of published literature to provide such a comprehensive profile of risks and behaviours of those who smoke crack cocaine. Previous published reviews identified assessed only high-risk sexual behaviours among this population. This also is the first study to synthesize evidence on the HIV and HCV disease transmission risks associated with the sharing of drug use equipment from a perspective that is not exclusively virologic. In light of recent epidemiological information indicating the disease transmission risks associated with sharing crack smoking devices, this review is particularly timely. As well, the synthesis of this evidence was directly used to inform the thematic interview guide therefore providing current and relevant contextual discussion probes.

Second, the qualitative approach undertaken for the data collection phase is a major strength of this research. The less common approach to epidemiological research, qualitative inquiry, provided the ideal methodology to explore this topic area. The major findings from this research, including the impact of policy decisions on this population, would not be as rich or meaningful if explored in a quantitative manner. There is existing evidence on Canadian responses to crack-specific harm reduction however, there is little information about the impact this has on individuals using crack. Utilizing qualitative methodology allowed this project to present the personal

experiences of individuals who are impacted first-hand by political and community responses to the programming.

Third, the method of participant recruitment which was used for data collection proved to be invaluable to this study. The engagement of peers Amanda and Adam as recruiters enabled interviews with participants that I, as a researcher, would otherwise never been able to reach. I met with many participants who did not access services nor were they initially interested in being involved with research however, it was the personal approach by a peer which made participation possible, more comfortable and meaningful. As well, peer recruiters only approached individuals who they knew were currently using crack, which meant that I spoke with individuals who legitimately met the inclusion criteria, which may not have been the case if only researcher-recruited sampling had been employed.

Finally, the local relevance of this evidence provides legitimacy to this piece of research. The need for more informed policy, and evidence for which to inform that policy, is in demand by programmers and decision makers. The voices of the participants which address issues of disproportionate risk, discrimination, and vulnerability may be useful in the process of improving healthcare and harm reduction services to this population.

4.3 Interpretations of Findings

The interpretation of findings from this research will be organized according to the three major research areas which were reported in the qualitative interview results; healthcare experiences, experiences with drug treatment, and crack-specific harm reduction services.

4.3.1 Experiences with Healthcare

When discussing healthcare experiences in Ottawa, interview participants spoke almost exclusively about barriers and challenges faced when seeking and receiving medical care, a finding which is consistent with findings identified through the literature review. In the present study, barriers faced by participants did not differ significantly between care from a regular family doctor, a higher-threshold community care clinic, or in hospital-based care settings.

Participants who spoke of accessing low-threshold community clinics for the most part, had more positive experiences with healthcare professionals compared to those who relied on higher-threshold levels of care, a finding consistent with many study findings identified in the literature (191,192). Lower-threshold clinics presented fewer barriers to individuals such as not requiring a provincial health card. A shelter-based clinic in Ottawa provided a much needed point of access to healthcare among this population and for many, was their sole source of community-based care. No published evidence was identified during the systematic review that assessed healthcare within a shelter-based setting.

Consistent with findings identified in the literature from the systematic review (97), individuals in the present study experienced great difficulties accessing and being taken on as a patient by a regular family doctor. Also consistent with identified literature was observation that this population may have an overreliance on emergency and inpatient health services (48,199). As expressed in the literature and evident from participant interviews, this overreliance it may be the result of chaotic lifestyles and difficulty accessing primary care in the community via a family provider or walk-in clinic (48,199). In the present study, hospital-based care was the sole form of care that some participants perceived was available to them. However, participants were often uneasy seeking hospital-based care as a result of negative, past experiences. Experiencing discrimination from hospital-based healthcare providers was associated with a decrease in treatment seeking behaviours and often resulted in the development of more complex health concerns.

Most participants in this study who reported a negative experience with healthcare faced discrimination about their drug use from healthcare providers either in the community clinics, with their regular family doctors, or in hospital, a finding which is also consistent with the literature (9,38,48). In the present study, clinics that were situated in Community Health Centres (CHCs) or shelters seemed to provide more stigma-free experiences for individuals who smoke crack compared to hospitals or regular walk-in clinics.

Participants in this sample who were dual users of crack and opiates faced unique barriers to accessing healthcare, which is consistent with findings from two studies identified in the systematic review (97,198). Connecting with a methadone provider to assist with the reduction of opiate use prevented some participants from connecting with a regular family doctor. This structural barrier is a result of a provincial health initiative to connect the general population with a family doctor. This initiative however, is an example of an intervention targeted at the general population which does not account for the unique needs and healthcare requirements of people living with drug addictions. To engage this population further within the healthcare system, it is necessary to reduce barriers which prevent individuals from accessing primary care in the community.

4.3.2 Experiences with Drug Treatment Services

In both the present study and in the published literature, individuals who smoke crack expressed difficulty accessing appropriate drug treatment services. Overwhelmingly, participants in the present study reported a complete absence of any treatment programming focused on decreasing the use of crack or cocaine. Although both day programs and inpatient detox programs exist for opiate use, there is a lack of programming which addresses the unique addiction to cocaine-based substances. While many studies identified long wait list times as being the most prominent barrier for people who smoke crack (226,227), the largest obstacle faced by participants in this study was a complete absence of appropriate and drug-specific treatment programs.

The need for immediately available and appropriate treatment programs is reported by many participants who believe the absence of treatment services may mean they are less likely to seek out treatment in the future. Almost all of the participants in the present study had previous experience with a drug treatment program either in Ottawa or elsewhere in Ontario and for those who had difficulty accessing or completing treatment programs, they reported being less motivated and willing to seek subsequent treatment interventions. Based on these findings, there is a need to explore options for the implementation of drug treatment programming in Ottawa that addresses the treatment needs of individuals who smoke crack.

Participants reported experiences of discrimination and felt stigmatized as a result of their crack use during drug treatment experiences, a unique finding which was not

identified in the systematic review. Individuals in this study reported feeling discriminated against by psychiatrists, social workers, and treatment coordinators and other program staff. These experiences of stigma directly led to poor treatment outcomes for some participants and many were unable or unwilling to complete their program. There is a need to address drug-related stigma at a systemic level as it relates to healthcare and care-related services, including drug treatment.

Difficulties with transportation created challenges for participants travelling to treatment programming and fulfilling post-treatment; findings substantiated by findings identified in the systematic review (107,231,246). As well, a lack of appropriate and comprehensive post-treatment supports was identified to be a challenge by study participants and in the literature (191), which made it difficult for individuals to sustain reduced drug use. Both transportation and post-treatment support aspects should be appropriately incorporated into treatment programming, particularly among this population.

Addressing an individual's intrinsic desire to begin treatment was not identified in studies which were included in the systematic review however; findings participant interviews indicate that the personal motivation to quit crack use may be essential for decreased crack use in the long term. A current treatment approach in Ottawa which mandates individuals to treatment through the justice system may be an ineffective strategy for decreasing crack use among some individuals. Individuals who are assigned to treatment may find it difficult commit to reducing their drug use when it is

not intrinsically motivated. Based on these findings, it is essential to assess an individual's willingness and commitment prior to enrollment in a drug treatment program.

In the published literature, housing instability created structural barriers for individuals who were trying to access drug treatment as they lacked required documentation, such as a proof of home address. In the present study, unstable housing did not lead to the same type of barriers for participants however, it did mean that reducing crack use became less of a personal priority. Participants who relied on friends and shelters for accommodation reported housing and personal safety to be a larger priority than enrollment in drug treatment. As a result, local initiatives which assist individuals with finding housing may be appropriately situated to connect these individuals with treatment programming, when individuals are personally willing and feel able to do so.

Also consistent with the literature was the participants expressed need for a pharmaceutical substitution therapy for cocaine, comparable to the use of Methadone Maintenance Therapy (MMT) for reducing opiate withdrawal symptoms. The role of substitution therapy for cocaine use is not well developed as decreased use of cocaine does not lead to the same physical withdrawal symptoms (245). As indicated by participants, the ideal substitution therapy for crack use would need to lessen the psychological symptoms associated with crack use rather than exclusively lessening of physical discomfort. As documented in the literature, individuals who smoke crack on

MMT tended to have poorer methadone-related outcomes, such as continued opiate use (237,238). For some participants in the present study however, MMT allowed them to regain some control in their lives and sustained decrease in opiate use was successful for many.

In the present study, many participants expressed that a change in environment would be necessary for them to effectively reduce their crack use. Treatment options which provide the opportunity to leave their present environment where they use drugs would be considered most helpful by this population. This aspect of environmental change was not identified from the literature but may be particularly important in Ottawa due to the centralization of prevention and health services which currently exist around the primary drug using locations.

Social support-related findings also appeared to be slightly contrary to the published literature. Women in this study seem to have higher levels of perceived support from friends and family compared to those in the literature where women often felt completely isolated due to their addiction (231). Interestingly, women in the present study appeared to have higher levels of social support in place compared to men in this study, a finding which appeared to benefit women when facing challenges associated with housing or contemplating drug treatment.

From the analysis of the published findings identified in literature search, it was observed that participants receiving drug treatment interventions had more positive

outcomes associated with their drug use when the interventions were designed and delivered in both culturally and gender appropriate ways (108, 257). From this sample, there were no participants who addressed the need for culturally appropriate treatment however, the overall lack of treatment options in Ottawa may lead participants to focus less on specific cultural needs at this time. In Ottawa however, there may be a need to develop culturally appropriate interventions for individuals whether that is incorporating language, such as French programming, or traditions and values, such as programming which responds to the needs of Aboriginal Canadians.

Observed in studies included in this review of the literature, enhanced and more focused interventions were associated with reduced drug use (109,231). With respect to designing appropriate interventions, I would suggest that additional tailoring is necessary for this population rather than only focusing on gender or cultural aspects. As heard from many participants, a variety of features of a treatment program make it more or less difficult to engage therefore, tailoring a treatment program to suit an individual's preferences may lead to more positive treatment outcomes. Since one model of treatment program will likely not suit the needs of all potential participants, a flexible approach to treatment implementation and delivery will likely provide options that may meet the needs for many people who smoke crack.

A holistic approach to drug treatment was described as appropriate by participants in the present study. Participants emphasized the need to "treat the person" and the unique circumstances that surround their crack use to achieve more successful post-

treatment outcomes. Participants believed that the integration of education or skill development would be beneficial to treatment programming. The integration of peer support and peer-delivered interventions were highlighted by study participants as a helpful and compassionate source of support during treatment.

4.3.3 Crack-specific Harm Reduction Programming in Ottawa

As heard by participants in this study, the existing crack-specific harm reduction programming in Ottawa provides the opportunity to access clean crack smoking supplies and connect with a frontline worker, often a nurse. However, what was described most often by participants are the limitations of this program as a result of program guidelines, existing coverage of the program, as well as relationships with local law enforcement.

Participants identified certain times, particularly evenings and weekends, where accessing safer crack smoking supplies was difficult. Decreased coverage during the evening hours and a lack of coverage through the night left participants with no way to access new and unused supplies. As a result, participants in this study reported that this lack of coverage led to increased sharing behaviours. As seen in the literature however, recent epidemiological evidence indicates that sharing behaviours may facilitate transmission of HIV or HCV between individuals (8,159,183). Therefore, every effort needs to be made to reduce engagement in sharing drug use supplies which includes increasing the accessibility of collecting safer smoking supplies.

Some participants who appeared to have the greatest difficulty accessing unused supplies were the women in Ottawa who worked in the sex trade as the current operating hours of the program were not ideal since they most often needed supplies during nighttime hours when the services were unavailable. Among this population, it is important to embrace their interest in health promotion and harm reduction,

particularly since they engage in high-risk drug- and sex-related behaviours, as identified by many studies in the systematic review. If women who engage in drug-related and sexual-related risk behaviours seek out services which are unavailable, they may be less likely to seek out prevention services in the future. Every attempt should be made to connect these individuals with appropriate prevention resources, especially if they are making the effort to collect these supplies.

Aside from the hours of availability, participants expressed frustrations surrounding the imposed quantity limit for the collection of stems. For many participants, the limit of five stems prevented them from collecting stems for peers who were unable or unwilling to collect stems for themselves. Some participants tried to collect stems for housemates or peers on the street but the limit restricted the amount they could collect. As a result, individuals were left giving away their own stems or sharing their stems with peers. There is a need to remove this quantity limit to ensure that there is adequate coverage of supplies as well as to support a peer-distribution approach in Ottawa. As seen in the literature, peer models of harm reduction supply distribution have had great success and may provide services to individuals who would otherwise not visit the distribution sites themselves (251). By limiting the amount of supplies which may be collected, Ottawa-based services are preventing the development of a peer system of distribution and education. Based on the participants in this sample, there are engaged individuals who use crack and who value the role of peer distribution and would be interested in pursuing a similar program locally.

One of the largest barriers to accessing safer smoking supplies was the absence of crack-specific harm reduction programming in Ottawa-based shelters. Many participants who were unstably housed relied on these shelters for temporary residence. The risks resulting from decreased availability of supplies at these locations are further amplified by the fact that most participants reported buying and using their drugs most often outside of the shelters. Furthermore, a women's transitional housing unit in Ottawa which promotes the principle of harm reduction still does not provide access to safer crack smoking supplies. For these women, some of whom also engaged in sex work, they expressed that having access to safer crack smoking supplies at the house may provide greater benefit than the existing needle and syringe program. Therefore, there is a need to incorporate crack-specific harm reduction programming at shelters and transitional housing locations where many individuals engage in crack use.

Aside from the availability of supplies, the educational component of the existing harm reduction programming emerged as an area of concern. Harm reduction programming exists to provide individuals with harm reducing supplies and to offer an opportunity for health intervention, often through a nurse or outreach worker (24). Currently, individuals who are accessing the distribution program appear to still be unaware of many risks associated with sharing stems, such as the risk of HIV or HCV transmission. Although some participants were aware of such risks, the accuracy of the knowledge varied which was also reflected in their engagement in high-risk drug using behaviours, such as sharing. There is a need to enhance the educational aspect of this harm

reduction program and to increase opportunities for knowledge transfer between clients and frontline staff.

Some participants in this study may have had an inaccurate perception of their risk for disease transmission, an observation which was identified in the published literature among this population (144). Inaccurate perception of risk among participants may be a result of inaccurate knowledge regarding disease transmission risks as well as a belief that peers would voluntarily disclose their HIV or HCV status. Increased awareness of transmission risks is needed among this population. There is also a need to encourage clients to consistently take precautions to protect themselves from the possibility of disease transmission.

To prevent transmission from those who are living with HIV or HCV, there is a need to provide education and raise awareness regarding disease transmission risks and a need to provide intervention opportunities for individuals to modify their drug use behaviours (24). The literature indicates that individuals who smoke crack are less likely to be tested for HIV or HCV and also less likely to return for test results (107,201). Therefore, to decrease transmission from individuals who are positive, it is necessary not only to provide education but also to provide low-threshold and stigma-free testing opportunities so individuals may be aware of their current status.

Overall, it became increasingly evident from the participants in this study that the educational component of harm reduction services is inextricably linked with the

availability of safer crack smoking supplies. Individuals that are made aware of disease transmission risks and choose to modify their drug using behaviours can only do so if safer smoking supplies are made available more often and in quantities that are sufficient. To have a comprehensive and effective crack-specific harm reduction program in Ottawa, it is imperative to scale-up both the coverage of supplies as well as the knowledge transfer component of existing programming.

Above all, participants identified a gap in harm reduction services in Ottawa that may prove to be more difficult to resolve. Almost all participants in this study identified the need for a safer place to smoke crack in Ottawa. Particularly among those who were unstably housed and forced to use outside and in public, the provision of a supervised and health-based facility to allow for the consumption of crack was considered essential. As seen in the literature, supervised consumption facilities exist in Europe, Australia, and Canada (253) and have been shown to be associated with improved community level outcomes and increased connectivity between healthcare services and people who use drugs (163,253,256).

In describing the ideal supervised consumption facility in Ottawa, all participants described a facility which was clinical in nature and provided the opportunity for access to healthcare resources, such as primary care through a nurse and referrals for drug treatment services. Many believed the need to use crack inside would lead them to have fewer burns and may decrease the risk of disease transmission through the sharing of drug use supplies. Participants reported that the ability to access safer

smoking supplies at an SCF would dramatically decrease the engagement of stem sharing among themselves and peers, something which has also been observed in the literature (260).

Participants described a number of community-based reasons that they believed also necessitates the implementation of a supervised consumption facility: decreased public disturbances, decreased discarding of used equipment in public locations, as well as decreased public drug use. Interestingly, in a 2004 article by Wood and colleagues (255), investigators assessed these variables in Vancouver, British Columbia following the opening of Insite, the supervised injection facility. From this article, as well as a European article which measured the same variables, investigators found significant decreases in all of the three aforementioned areas (253,255). Reports from participants in this study along with findings from the published literature suggest that Ottawa may also see improvements in those three areas of public safety if a facility were opened in the city.

Overall, participants felt that a safer place to use would provide them with a place where they would not be forced to interact with police. Participants perceived that their interactions with police presented barriers which they felt powerless to address. The current attitudes of Ottawa law enforcement regarding drug use are presenting threats to the effectiveness of harm reduction programming in Ottawa, particularly for people who smoke crack.

Among participants in this study, the discrimination experienced from local police led to increased engagement in stem sharing, increased burns, decreased personal safety, and a decreased willingness to access harm reduction services. Among individuals who were able to access harm reduction materials, confiscation by police was an ongoing problem and prevented them from using the safer smoking supplies which they collected. Participants also reported a difference in the attitudes of police towards opiate users and crack users, an issue which created discrimination towards people who use crack and led to a disproportionate level of risk. Interestingly, police responses of this nature were not largely captured in the literature. Conversely, law enforcement in Vancouver have partnered with local harm reduction initiatives, a strategy which has led to an improved relationship between police and people who use drugs (255).

There is an urgent need in Ottawa to address the impact that law enforcement is having on harm reduction programming and on people in Ottawa who use drugs. Change in this area must be addressed at the root of the issue to ensure that the values and objectives of the local police and community programming are aligned. Systemic changes are required among the police force in Ottawa to reduce the discrimination which is directed at local residents who use drugs.

4.3.4 Stigma and Discrimination as a Cross-cutting Theme

In analyzing data from participant interviews, it became evident that every participant in this study spoke of stigma, at least one time, in relation to seeking or receiving prevention or treatment services. Discrimination towards individuals who use crack was by far perceived to be the largest barrier for individuals who need to access services within the community. Feeling discriminated against by health providers, community members, law enforcement, social workers, and administrators, this population faced discrimination and judgment in all aspects of care in Ottawa. Stigmatization resulted in decreased healthcare seeking behaviours, perceived poorer treatment outcomes, perceived poorer quality of care, as well as feelings of decreased self-worth.

Individuals who use drugs often face concurrent physical and mental health challenges along with their drug addiction, making them an inherently vulnerable and marginalized population. There is an urgent need for increased awareness and education regarding drug addiction among those providing healthcare services, local law enforcement, and the general population. The presence of stigma faced by this sample is not unlike that which is represented in the literature however, participants in this sample felt discriminated against by a much larger range of professionals than is documented in published evidence.

4.4 Recommendations

4.4.1 Recommended Research Directions

First, there is a need to increase the epidemiologic and virologic research which assesses risks of HIV and HCV transmission as a result of sharing crack smoking devices. Epidemiological evidence is only beginning to emerge regarding the transmission risks of HIV associated with sharing crack smoking devices and further confirmatory studies on the transmission of HCV through sharing would further strengthen existing evidence. This research needs to be conducted in a way that would be directly usable to health officials and decision-makers to ensure that knowledge transfer and dissemination is possible. Early engagement of and consultation with these stakeholders may lead to the development of usable and appropriately developed knowledge dissemination tools and strategies.

Second, research is needed regarding the development of a pharmaceutical substitution therapy for cocaine. As expressed by participants in this study and in the published literature, there is an absence of a pharmaceutical intervention available which may reduce the harms associated with cocaine and crack. Although the withdrawal symptoms are different than those targeted with methadone, providing an alternative to crack may reduce the harms associated with acquiring the drug as well as exposure to dangerous chemicals added to crack.

Third, with respect to the recruiting process employed in this study, the engagement of peers was valuable but certain aspects of the process were considered learning

opportunities for all parties. Additional community-based research for the development of published guidelines is needed for the proper and meaningful integration peers into the research process. The development of Best Practice guidelines co-developed by peers and researchers are needed to provide effective strategies that also serve to protect the best interest of the peers during this process.

Finally, there is a need to conduct an appropriate needs assessment in Ottawa among all stakeholders to assess the necessity and feasibility of implementing a supervised inhalation facility for individuals who smoke crack. Previously, a needs assessment was conducted regarding a safer injection facility however, there is a need to also focus on individuals who smoke crack. Among participants in this study, there is a need for this type of service however, it is necessary to conduct a thorough needs assessment in the community from which to provide appropriate recommendations in this area.

4.4.2 Recommended Programming Directions

This project has demonstrated the need to properly inform community health strategies through appropriate and relevant epidemiologic evidence. Based on new evidence arising from this thesis, there are recommendations which are useful to inform strategies at a programmatic level.

First, and foremost, additional educational programming is needed at the local level to inform the population on drug use and addiction. Primarily, there is a need to increase awareness and training regarding addiction targeted at healthcare professionals, law enforcement professionals, and those in a role who have consistent and direct interaction with individuals who use drugs. Education about addiction is necessary to reduce the stigma surrounding drug use which is directly and negatively impacting health-related outcomes.

Second, there is a need to upscale drug treatment options in Ottawa and a need to implement programming which is appropriate and relevant to people who use crack. The vast majority of participants in this study spoke of their dislike regarding their crack use and they wished to stop their use however, none felt that there were viable treatment options available to them in Ottawa. There is a need for both low- and high-threshold approaches to treatment which are immediately available upon request to individuals.

Third, there is a need to increase the role of peers in the education and health promotion aspects of harm reduction in Ottawa. The effectiveness of peers in harm reduction supply distribution and education has been observed in the literature and I believe would be a very useful and effective knowledge transfer tool in Ottawa for this population. Knowledge transfer regarding harm reducing behaviours may be most effective when coming from peers who are informed about reducing risks associated with disease transmission. Increasing education regarding the risks of stem sharing and the preventative role of the latex mouthpiece needs to be more in-grained in this population, an objective that may best be suited to delivery by peer education.

Finally, there is a need for comprehensive education directed at the sexual risk behaviours of people who smoke crack. Based on the systematic review, it is evident that there are many sexual-related risks taken by individuals while using crack cocaine. In addressing the disease transmission risks associated with stem sharing, it is important to not lose sight of the concurrent sexual transmission risks. Developing awareness of sexual health risks alongside transmission risks associated with stem sharing may be useful and appropriate for this population.

4.4.3 Recommended Policy Directions

This project has demonstrated the importance of having policies which are appropriately tailored to this population as well as having policies which are accurately informed by scientific evidence. Based on new evidence arising from this thesis, there are recommendations that should be taken into account for future policy development.

First, at a local level, there is a need to modify the existing policy regarding the limit of crack smoking stems which may be collected per individual. Based on evidence in the systematic review and participant interviews, it is evident that limiting the amount of harm reduction supplies which can be collected may increase the likelihood that drug use supplies will be shared.

Second, and at a more systemic level, there is a need to revise policies surrounding the addiction component of training received by healthcare professionals and law enforcement officers. Increased training on addiction and harm reduction in medical schools, in police academies, and in the training of other health professionals may increase compassion towards individuals who use drugs. Increased awareness among healthcare professionals and law enforcement may decrease discrimination directed towards people who use drugs and therefore, may improve the quality of treatment and prevention services they receive.

Third, there is a need to develop policy and implementation guidelines that are appropriately developed and informed according to the most recent and relevant

epidemiological evidence. Recent years have seen the emergence of virologic evidence demonstrating a need to increase the harm reduction initiatives for people who use crack. It is imperative that future policies surrounding harm reduction are based on peer-reviewed evidence and not on current political ideology.

Finally, in regards to the method of policy development in this area, it is necessary to inform policies not only with epidemiological evidence but also based on the lived experiences of people who use drugs. Policies focused on people who use drugs should be developed through a partnership with people who use drugs, epidemiologists, healthcare providers, law enforcement, and policy decision-makers. It is necessary to seek input from all stakeholders in this process, particularly people who use drugs as they will be most affected by drug-related policy decisions.

5.0 REFERENCES

1. Inciardi JA, Surratt HL, Pechansky F, Kessler F, von Diemen L, da Silva EM, et al. Changing patterns of cocaine use and hiv risks in the south of Brazil. *J Psychoactive Drugs* 2006 Sep;38(3):305-310.
2. Fischer B, Rehm J, Patra J, Kalousek K, Haydon E, Tyndall M, et al. Crack across Canada: Comparing crack users and crack non-users in a Canadian multi-city cohort of illicit opioid users. *Addiction* 2006 Dec;101(12):1760-1770.
3. Wechsberg WM, Zule WA, Riehman KS, Luseno WK, Lam WK. African-American crack abusers and drug treatment initiation: barriers and effects of a pretreatment intervention. *Substance Abuse Treatment, Prevention, & Policy* 2007;2:10.
4. Butterfield MI, Bosworth HB, Stechuchak KM, Frothingham R, Bastian LA, Meador KG, et al. Racial differences in hepatitis B and hepatitis C and associated risk behaviors in veterans with severe mental illness. *J Natl Med Assoc* 2004 Jan;96(1):43-52.
5. Siegel RK. Treatment of cocaine abuse: historical and contemporary perspectives. *J Psychoactive Drugs* 1985 Jan-Mar;17(1):1-9.
6. Edlin BR, Irwin KL, Faruque S, McCoy CB, Word C, Serrano Y, et al. Intersecting epidemics--crack cocaine use and HIV infection among inner-city young adults. Multicenter Crack Cocaine and HIV Infection Study Team. *N Engl J Med* 1994 Nov 24;331(21):1422-1427.
7. Fischman MW. Behavioral pharmacology of cocaine. *J Clin Psychiatry* 1988 Feb;49 Suppl:7-10.
8. Macias J, Palacios RB, Claro E, Vargas J, Vergara S, Mira JA, et al. High prevalence of hepatitis C virus infection among noninjecting drug users: association with sharing the inhalation implements of crack. *Liver International* 2008 Jul;28(6):781-786.
9. Siegal HA, Draus PJ, Carlson RG, Falck RS, Wang J. Perspectives on health among adult users of illicit stimulant drugs in rural Ohio. *The Journal of Rural Health* 2006 Apr;22(2):169-173.
10. Verthein U, Haasen C, Prinzleve M, Degkwitz P, Krausz M. Cocaine use and the utilisation of drug help services by consumers of the open drug scene in Hamburg. *Eur Addict Res* 2001 Dec;7(4):176-183.
11. International Harm Reduction Association. North America - Regional Overview. 2009; Available at: <http://www.ihra.net/NorthAmerica>. Accessed 10/23, 2009.
12. Andrade T, Lurie P, Medina M. The opening of South America's first needle exchange program and an epidemic of crack cocaine use in Salvador, Bahia-Brazil. *AIDS and Behavior* 2001;5(1):51-64.

13. Dunn J, Laranjeira RR. Transitions in the route of cocaine administration--characteristics, direction and associated variables. *Addiction* 1999 Jun;94(6):813-824.
14. Smart RG. "Crack" cocaine use in Canada: a new epidemic? *Am J Epidemiol* 1988 Jun;127(6):1315-1317.
15. Faruque S, Edlin BR, McCoy CB, Word CO, Larsen SA, Schmid DS, et al. Crack cocaine smoking and oral sores in three inner-city neighborhoods. *J Acquir Immune Defic Syndr Hum Retrovirol* 1996 Sep;13(1):87-92.
16. Chen K, Kandel D. Relationship between extent of cocaine use and dependence among adolescents and adults in the United States. *Drug Alcohol Depend* 2002 Sep 1;68(1):65-85.
17. Carlson RG, Siegal HA. The crack life: an ethnographic overview of crack use and sexual behavior among African-Americans in a midwest metropolitan city. *J Psychoactive Drugs* 1991 Jan-Mar;23(1):11-20.
18. Ensminger ME, Anthony JC, McCord J. The inner city and drug use: initial findings from an epidemiological study. *Drug Alcohol Depend* 1997 Dec 15;48(3):175-184.
19. Fagan J. Women and drugs revisited: Female participation in the cocaine economy. *The Journal of Drug Issues* 1994;24:179-225.
20. Royse D, Leukefeld C, Logan TK, Dennis M, Wechsberg W, Hoffman J, et al. Homelessness and gender in out-of-treatment drug users. *American Journal of Drug & Alcohol Abuse* 2000 May;26(2):283-296.
21. Leonard L, DeRubeis E, Pelude L, Medd E, Birkett N, Seto J. "I inject less as I have easier access to pipes" Injecting, and sharing of crack-smoking materials, decline as safer crack-smoking resources are distributed. *International Journal of Drug Policy* 2008 Jun;19(3):255-264.
22. Public Health Agency of Canada. I-Track: Enhanced Surveillance of Risk Behaviours among Injecting Drug Users in Canada, Phase 1 Report. 2006.
23. DeBeck K, Kerr T, Li K, Fischer B, Buxton J, Montaner J, et al. Smoking of crack cocaine as a risk factor for HIV infection among people who use injection drugs. *CMAJ* 2009 Oct 27;181(9):585-589.
24. International Harm Reduction Association. What is Harm Reduction?: A Position Statement from the International Harm Reduction Association. 2009; Available at: <http://www.ihra.net/FactSheets>. Accessed 10/23, 2009.
25. International Harm Reduction Association. The Global State of Harm Reduction. 2009; Available at: <http://www.ihra.net/FactSheets>. Accessed 10/23, 2009.
26. Tortu S, McMahon JM, Pouget ER, Hamid R. Sharing of noninjection drug-use implements as a risk factor for hepatitis C. *Subst Use Misuse* 2004 Jan;39(2):211-224.

27. Public Health Agency of Canada. HIV/AIDS Epi Updates - July 2010 . 2011; Available at: <http://www.phac-aspc.gc.ca/aids-sida/publication/epi/2010/1-eng.php>. Accessed 03/28, 2011.
28. Ontario Hepatitis C Task Force. A Proposed Strategy to Address Hepatitis C in Ontario: 2009-2014. 2009.
29. Bowser BP. Crack and AIDS: an ethnographic impression. *J Natl Med Assoc* 1989 May;81(5):538-540.
30. Bond L, Semaan S. At risk for HIV infection: incarcerated women in a county jail in Philadelphia. *Women Health* 1996;24(4):27-45.
31. Guindalini C, Vallada H, Breen G, Laranjeira R. Concurrent crack and powder cocaine users from Sao Paulo: do they represent a different group? *BMC Public Health* 2006 Jan 20;6:10.
32. Dunn J, Laranjeira RR, Da Silveira DX, Formigoni ML, Ferri CP. Crack cocaine: an increase in use among patients attending clinics in Sao Paulo: 1990-1993. *Subst Use Misuse* 1996 Mar;31(4):519-527.
33. Ferri CP, Gossop M, Laranjeira RR. High dose cocaine use in Sao Paulo: a comparison of treatment and community samples. *Subst Use Misuse* 2001 Feb;36(3):237-255.
34. Prinzleve M, Haasen C, Zurhold H, Matali JL, Bruguera E, Gerevich J, et al. Cocaine use in Europe - a multi-centre study: patterns of use in different groups. *Eur Addict Res* 2004;10(4):147-155.
35. Hansen H, Alegria M, Caban CA, Pena M, Lai S, Shrout P. Drug Treatment, Health, and Social Service Utilization by Substance Abusing Women From a Community-Based Sample. *Med Care* 2004 Nov;42(11):1117-1124.
36. Hatsukami DK, Fischman MW. Crack cocaine and cocaine hydrochloride. Are the differences myth or reality? *JAMA* 1996 Nov 20;276(19):1580-1588.
37. Vivancos R, Maskrey V, Rumball D, Harvey I, Holland R. Crack/cocaine use in a rural county of England. *Journal of Public Health* 2006 Jun;28(2):96-103.
38. Day M, Devieux JG, Reid SD, Jones DJ, Meharris J, Malow RM. Risk behaviours and healthcare needs of homeless drug users in Saint Lucia and Trinidad. *ABNF J* 2004 Nov-Dec;15(6):121-126.
39. Boyd CJ, Mieczkowski T. Drug use, health, family and social support in "crack" cocaine users. *Addict Behav* 1990;15(5):481-485.
40. Irwin KL, Edlin BR, Faruque S, McCoy HV, Word C, Serrano Y, et al. Crack cocaine smokers who turn to drug injection: characteristics, factors associated with injection, and implications for HIV transmission. The Multicenter Crack Cocaine and HIV Infection Study Team. *Drug Alcohol Depend* 1996 Oct;42(2):85-92.
41. Sherman SG, Latkin CA. Drug users' involvement in the drug economy: implications for harm reduction and HIV prevention programs. *J Urban Health* 2002 Jun;79(2):266-277.

42. Friedman SR, Furst RT, Jose B, Curtis R, Neaigus A, Des Jarlais DC, et al. Drug scene roles and HIV risk. *Addiction* 1998 Sep;93(9):1403-1416.
43. Roy E, Haley N, Leclerc P, Cedras L, Blais L, Boivin JF. Drug injection among street youths in Montreal: predictors of initiation. *J Urban Health* 2003 Mar;80(1):92-105.
44. Taylor-Seehafer MA. Positive youth development: reducing the health risks of homeless youth. *MCN Am J Matern Child Nurs* 2004 Jan-Feb;29(1):36-40.
45. Tortu S, Beardsley M, Deren S, Williams M, McCoy HV, Stark M, et al. HIV infection and patterns of risk among women drug injectors and crack users in low and high sero-prevalence sites. *AIDS Care* 2000 Feb;12(1):65-76.
46. Ferri CP, Gossop M. Route of cocaine administration: patterns of use and problems among a Brazilian sample. *Addict Behav* 1999 Nov-Dec;24(6):815-821.
47. Weatherby NL, McCoy HV, Metsch LR, Bletzer KV, McCoy CB, de la Rosa MR. Crack cocaine use in rural migrant populations: living arrangements and social support. *Subst Use Misuse* 1999 Mar-Apr;34(4-5):685-706.
48. Metsch LR, McCoy HV, McCoy CB, Miles CC, Edlin BR, Pereyra M. Use of health care services by women who use crack cocaine. *Women Health* 1999;30(1):35-51.
49. Sharpe TT, Lee LM, Nakashima AK, Elam-Evans LD, Fleming PL. Crack cocaine use and adherence to antiretroviral treatment among HIV-infected black women. *J Community Health* 2004 Apr;29(2):117-127.
50. Carlson RG, Falck RS, Wang J, Siegal HA, Rahman A. HIV needle risk behaviors and drug use: A comparison of crack-smoking and nonsmoking injection drug users in Ohio. *J Psychoactive Drugs* 1999 Jul-Sep;31(3):291-297.
51. Djumalieva D, Imamshah W, Wagner U, Razum O. Drug use and HIV risk in Trinidad and Tobago: qualitative study. *Int J STD AIDS* 2002 Sep;13(9):633-639.
52. Huidgens R, McCusker J, Stoddard A. Cocaine use and risky injection and sexual behaviors. *Drug Alcohol Depend* 1995 Jan;37(1):7-14.
53. Reid SD. Poor educational attainment and sexually transmitted infections associated with positive HIV serostatus among female in-patient substance abusers in Trinidad and Tobago. *Drug Alcohol Depend* 2006 Apr;82(SUPPL. 1):S81-S84.
54. van den Hoek A. STD control in drug users and street youth. *Genitourin Med* 1997 Aug;73(4):240-244.
55. Hoffman JA, Klein H, Eber M, Crosby H. Frequency and intensity of crack use as predictors of women's involvement in HIV-related sexual risk behaviors. *Drug & Alcohol Dependence* 2000 Mar 1;58(3):227-236.
56. Bornoalova MA, Daughters SB, Hernandez GD, Richards JB, Lejuez CW. Differences in impulsivity and risk-taking propensity between primary users of crack cocaine and primary users of heroin in a residential substance-use program. *Exp Clin Psychopharmacol* 2005 Nov;13(4):311-318.

57. Compton WM. Cocaine use and HIV risk in out of treatment drug abusers. *Drug & Alcohol Dependence* 2000 Mar 1;58(3):215-218.
58. Strenski TA, Marshall PA, Gacki JK, Sanchez CW. The emergent impact of syringe exchange programs on shooting galleries and injection behaviors in three ethnically diverse Chicago neighborhoods. *Med Anthropol* 2000;18(4):415-438.
59. Brewer TH, Zhao W, Metsch LR, Coltes A, Zenilman J. High-risk behaviors in women who use crack: knowledge of HIV serostatus and risk behavior. *Ann Epidemiol* 2007 Jul;17(7):533-539.
60. New York City Department of Health. Congenital syphilis; its prevention and control. *City Health Information* 1998;8(6).
61. Schultz S, Zwerig M, Singh T, Htoo M. Congenital syphilis-New York City 1986-1988. *MMWR* 1989;38:825-829.
62. Strain EC. Assessment and treatment of comorbid psychiatric disorders in opioid-dependent patients. *Clin J Pain* 2002 Jul-Aug;18(4 Suppl):S14-27.
63. Ross MW, Hwang LY, Leonard L, Teng M, Duncan L. Sexual behaviour, STDs and drug use in a crack house population. *Int J STD AIDS* 1999 Apr;10(4):224-230.
64. Word CO, Bowser B. Background to crack cocaine addiction and HIV high-risk behavior: The next epidemic. *Am J Drug Alcohol Abuse* 1997 Feb;23(1):67-77.
65. Weatherby NL, Shultz JM, Chitwood DD, McCoy HV, McCoy CB, Ludwig DD, et al. Crack cocaine use and sexual activity in Miami, Florida. *J Psychoactive Drugs* 1992 Oct-Dec;24(4):373-380.
66. Longshore D, Anglin M. Number of sex partners and crack cocaine use: Is crack an independent marker for HIV risk behavior? *Journal of Drug Issues* 1995;25:1-10.
67. Heffernan R, Chiasson MA, Sackoff JE. HIV risk behaviors among adolescents at a sexually transmitted disease clinic in New York City. *Journal of Adolescent Health* 1996 Jun;18(6):429-434.
68. Kang SY, Deren S, Andia J, Colon HM, Robles R. Egocentric HIV risk networks among Puerto Rican crack users in New York and in Puerto Rico: impact on sex risk behaviors over time. *AIDS Educ Prev* 2005 Feb;17(1):53-67.
69. de Souza CT, Diaz T, Suttmoller F, Bastos FI. The association of socioeconomic status and use of crack/cocaine with unprotected anal sex in a cohort of men who have sex with men in Rio de Janeiro, Brazil. *J Acquir Immune Defic Syndr* 2002 Jan 1;29(1):95-100.
70. Friedman SR, Ompad DC, Maslow C, Young R, Case P, Hudson SM, et al. HIV prevalence, risk behaviors, and high-risk sexual and injection networks among young women injectors who have sex with women. *Am J Public Health* 2003 Jun;93(6):902-906.
71. Wilson T, DeHovitz JA. STDs, HIV, and crack cocaine: a review. *AIDS Patient Care STDS* 1997 Apr;11(2):62-66.

72. Broadhead RS, van Hulst Y, Heckathorn DD. The impact of a needle exchange's closure. *Public Health Rep* 1999 Sep-Oct;114(5):439-447.
73. Adimora AA, Schoenbach VJ, Martinson FEA, Coyne-Beasley T, Doherty I, Stancil TR, et al. Heterosexually transmitted HIV infection among African Americans in North Carolina. *J Acquir Immune Defic Syndr* 2006 Apr;41(5):616-623.
74. Logan TK, Leukefeld C. Sexual and drug use behaviors among female crack users: a multi-site sample. *Drug & Alcohol Dependence* 2000 Mar 1;58(3):237-245.
75. Risser JM, Padgett P, Wolverton M, Risser WL. Relationship between heterosexual anal sex, injection drug use and HIV infection among black men and women. *Int J STD AIDS* 2009 May;20(5):310-314.
76. Chiasson MA, Stoneburner RL, Hildebrandt DS, Ewing WE, Telzak EE, Jaffe HW. Heterosexual transmission of HIV-1 associated with the use of smokable freebase cocaine (crack). *AIDS* 1991 Sep;5(9):1121-1126.
77. Theall KP, Sterk CE, Elifson KW, Kidder D. Factors associated with positive HIV serostatus among women who use drugs: continued evidence for expanding factors of influence. *Public Health Rep* 2003 Sep-Oct;118(5):415-424.
78. Booth RE, Watters JK, Chitwood DD. HIV risk-related sex behaviors among injection drug users, crack smokers, and injection drug users who smoke crack. *Am J Public Health* 1993 Aug;83(8):1144-1148.
79. Bux DA, Lamb RJ, Iguchi MY. Cocaine use and HIV risk behavior in methadone maintenance patients. *Drug Alcohol Depend* 1995 Jan;37(1):29-35.
80. Camacho LM, Bartholomew NG, Joe GW, Cloud MA, Simpson DD. Gender, cocaine and during-treatment HIV risk reduction among injection opioid users in methadone maintenance. *Drug Alcohol Depend* 1996 May;41(1):1-7.
81. Grella CE, Anglin MD, Wugalter SE. Cocaine and crack use and HIV risk behaviors among high-risk methadone maintenance clients. *Drug Alcohol Depend* 1995 Jan;37(1):15-21.
82. Joe GW, Simpson DD. HIV risks, gender, and cocaine use among opiate users. *Drug Alcohol Depend* 1995 Jan;37(1):23-28.
83. Inciardi JA, Chitwood DD, McCoy CB. Special risks for the acquisition and transmission of HIV infection during sex in crack houses. *J Acquir Immune Defic Syndr* 1992;5(9):951-952.
84. Strathdee SA, Galai N, Safaiean M, Celentano DD, Vlahov D, Johnson L, et al. Sex differences in risk factors for hiv seroconversion among injection drug users: a 10-year perspective. *Arch Intern Med* 2001 May 28;161(10):1281-1288.
85. Alpert PL, Shuter J, DeShaw MG, Webber MP, Klein RS. Factors associated with unrecognized HIV-1 infection in an inner-city emergency department. *Ann Emerg Med* 1996 Aug;28(2):159-164.

86. Hwang LY, Ross MW, Zack C, Bull L, Rickman K, Holleman M. Prevalence of sexually transmitted infections and associated risk factors among populations of drug abusers. *Clinical Infectious Diseases* 2000 Oct;31(4):920-926.
87. Kalichman SC, Rompa D, Cage M. Sexually transmitted infections among HIV seropositive men and women. *Sex Transm Infect* 2000 Oct;76(5):350-354.
88. Chirgwin K, DeHovitz JA, Dillon S, McCormack WM. HIV infection, genital ulcer disease, and crack cocaine use among patients attending a clinic for sexually transmitted diseases. *Am J Public Health* 1991 Dec;81(12):1576-1579.
89. Diaz T, Chu SY, Conti L, Sorvillo F, Checko PJ, Hermann P, et al. Risk behaviors of persons with heterosexually acquired HIV infection in the United States: results of a multistate surveillance project. *J Acquir Immune Defic Syndr* 1994 Sep;7(9):958-963.
90. DeHovitz JA, Kelly P, Feldman J, Sierra MF, Clarke L, Bromberg J, et al. Sexually transmitted diseases, sexual behavior, and cocaine use in inner-city women. *Am J Epidemiol* 1994 Dec 15;140(12):1125-1134.
91. Cleghorn FR, Jack N, Murphy JR, Edwards J. HIV-1 prevalence and risk factors among sexually transmitted disease clinic attenders in Trinidad. *AIDS* 1995 Apr;9(4):389-394.
92. Chesney MA. Prevention of HIV and STD infections. *Prev Med* 1994 Sep;23(5):655-660.
93. Paz-Bailey G, Teran S, Levine W, Markowitz LE. Syphilis outbreak among Hispanic immigrants in Decatur, Alabama: association with commercial sex. *Sex Transm Dis* 2004 Jan;31(1):20-25.
94. Sena AC, Muth SQ, Heffelfinger JD, O'Dowd JO, Foust E, Leone P. Factors and the sociosexual network associated with a syphilis outbreak in rural North Carolina. *Sex Transm Dis* 2007 May;34(5):280-287.
95. Deren S, Kang SY, Colon HM, Andia JF, Robles RR. HIV incidence among high-risk Puerto Rican drug users: a comparison of East Harlem, New York, and Bayamon, Puerto Rico. *J Acquir Immune Defic Syndr* 2004 Aug 15;36(5):1067-1074.
96. Friedman SR, Flom PL, Kottiri BJ, Zenilman J, Curtis R, Neaigus A, et al. Drug use patterns and infection with sexually transmissible agents among young adults in a high-risk neighbourhood in New York City. *Addiction* 2003 02;98(2):159-169.
97. Cunningham CO, Sohler NL, Berg KM, Shapiro S, Heller D. Type of Substance Use and Access to HIV-Related Health Care. *AIDS Patient Care STDS* 2006 Jun;20(6):399-407.
98. Reid SD. HIV seroprevalence and risk factors in female substance abusers seeking rehabilitation in Trinidad and Tobago. *West Indian Med J* 2004 Jun;53(3):155-158.
99. McCoy CB, Lai S, Metsch LR, Messiah SE, Zhao W. Injection drug use and crack cocaine smoking: independent and dual risk behaviors for HIV infection. *Ann Epidemiol* 2004 Sep;14(8):535-542.

100. Davis WR, Johnson BD, Randolph D, Liberty HJ. Risks for HIV infection among users and sellers of crack, powder cocaine and heroin in central Harlem: implications for interventions. *AIDS Care* 2006 Feb;18(2):158-165.
101. Shannon K, Bright V, Gibson K, Tyndall MW, Maka Project P. Sexual and drug-related vulnerabilities for HIV infection among women engaged in survival sex work in Vancouver, Canada. *Canadian Journal of Public Health. Revue Canadienne de Sante Publique* 2007;98(6):465-469.
102. Maher L, Daly K. Women in the Street-level Drug Economy: Continuity or Change? *Criminology* 1996;34(4):465-492.
103. Jacobs BA, Miller J. Crack dealing, gender, and arrest avoidance. *Soc Probl* 1998 Nov;45(4):550-569.
104. Booth RE. Gender differences in high-risk sex behaviors among heterosexual drug injectors and crack smokers. *Am J Drug Alcohol Abuse* 1995 Nov;21(4):419-432.
105. El-Bassel N, Gilbert L, Witte S, Wu E, Gaeta T, Schilling R, et al. Intimate partner violence and substance abuse among minority women receiving care from an inner-city emergency department. *Womens Health Issues* 2003 Jan-Feb;13(1):16-22.
106. Dickson Gomez J, Bodnar G, Guevara A, Rodriguez K, Gaborit M. Crack use sites and HIV risk in El Salvador. *J Drug Iss* 2007 Spr;37(2):445-474.
107. MacMaster SA. Experiences with, and Perceptions of, Barriers to Substance Abuse and HIV Services Among African American Women Who Use Crack Cocaine. *Journal of Ethnicity in Substance Abuse* 2005;4(1):53-75.
108. Okpaku S, MacMaster SA, Dennie S, Tolliver D. A model program for increasing treatment access for African American women who use crack cocaine and are at risk of contracting HIV. *J Hum Behav Soc Environ* 2008;17(3-4):293-307.
109. Schlosser AV, Abdallah AB, Callahan CL, Bradford S, Cottler LB. Does readiness to change predict reduced crack use in human immunodeficiency virus prevention? *J Subst Abuse Treat* 2008 Jul;35(1):28-35.
110. Zierler S, Krieger N. Reframing women's risk: social inequalities and HIV infection. *Annu Rev Public Health* 1997;18:401-436.
111. Freeman RC, Collier K, Parillo KM. Early life sexual abuse as a risk factor for crack cocaine use in a sample of community-recruited women at high risk for illicit drug use. *Am J Drug Alcohol Abuse* 2002;28(1):109-131.
112. Logan TK, Leukefeld C, Farabee D. Sexual and drug use behaviors among women crack users: implications for prevention. *AIDS Education & Prevention* 1998 Aug;10(4):327-340.
113. Haydon E, Fischer B. Crack use as a public health problem in Canada: call for an evaluation of 'safer crack use kits'. *Canadian Journal of Public Health. Revue Canadienne de Sante Publique* 2005;96(3):185-188.

114. Butterfield MI, Bosworth HB, Meador KG, Stechuchak KM, Essock SM, Osher FC, et al. Gender differences in hepatitis C infection and risks among persons with severe mental illness. *Psychiatr Serv* 2003 Jun;54(6):848-853.
115. Hoffman JA, Klein H, Eber M, Crosby H. Frequency and intensity of crack use as predictors of women's involvement in HIV-related sexual risk behaviors. *Drug Alcohol Depend* 2000 Mar 1;58(3):227-236.
116. Jones DL, Irwin KL, Inciardi J, Bowser B, Schilling R, Word C, et al. The high-risk sexual practices of crack-smoking sex workers recruited from the streets of three American cities. The Multicenter Crack Cocaine and HIV Infection Study Team. *Sex Transm Dis* 1998 Apr;25(4):187-193.
117. Fullilove RE, Fullilove MT, Bowser BP, Gross SA. Risk of sexually transmitted disease among black adolescent crack users in Oakland and San Francisco, Calif. *JAMA* 1990 Feb 9;263(6):851-855.
118. Inciardi JA. Crack, crack house sex, and HIV risk. *Arch Sex Behav* 1995 Jun;24(3):249-269.
119. Goldstein PJ, Ouellet LJ, Fendrich M. From bag brides to skeezers: a historical perspective on sex-for-drugs behavior. *J Psychoactive Drugs* 1992 Oct-Dec;24(4):349-361.
120. Siegal HA, Falck RS, Wang J, Carlson RG. History of sexually transmitted diseases infection, drug-sex behaviors, and the use of condoms among midwestern users of injection drugs and crack cocaine. *Sex Transm Dis* 1996 Jul-Aug;23(4):277-282.
121. Gilchrist G, Cameron J, Scoular J. Crack and cocaine use among female prostitutes in Glasgow: Risky business. *Drugs: Education, Prevention & Policy* 2005 Oct;12(5):381-391.
122. Shannon K, Bright V, Duddy J, Tyndall MW. Access and utilization of HIV treatment and services among women sex workers in Vancouver's Downtown Eastside. *Journal of Urban Health* 2005 Sep;82(3):488-497.
123. Shannon K, Ishida T, Lai C, Tyndall MW. The impact of unregulated single room occupancy hotels on the health status of illicit drug users in Vancouver. *International Journal of Drug Policy* 2006 Mar;17(2):107-114.
124. Cohen E, Navaline H, Metzger D. High-risk behaviors for HIV: a comparison between crack-abusing and opioid-abusing African-American women. *J Psychoactive Drugs* 1994 Jul-Sep;26(3):233-241.
125. Inciardi J. Kingrats, chicken heads, slow necks, freaks, and blood suckers: A glimpse at the Miami sex-for-crack market. New York City: Lexington; 1993.
126. Falck RS, Wang J, Siegal HA, Carlson RG. Current physical health problems and their predictors among a community sample of crack-cocaine smokers in Ohio. *J Psychoactive Drugs* 2003 Oct-Dec;35(4):471-478.

127. Maher L, Curtis R. Women the edge of crime, crack cocaine and the changing contexts of street level sex work in New York City. *Crime, Law and Social Change* 1992;18:221-258.
128. Haverkos HW, Steel E. Crack cocaine, fellatio, and the transmission of HIV. *Am J Public Health* 1991 Aug;81(8):1078-1079.
129. Green A, Ward H, Day S. Crack cocaine and female prostitution in West London. 1995;65.
130. Surratt HL, Inciardi JA. HIV risk, seropositivity and predictors of infection among homeless and non-homeless women sex workers in Miami, Florida, USA. *AIDS Care* 2004 Jul;16(5):594-604.
131. Maslow CB, Friedman SR, Perlis TE, Rockwell R, Des Jarlais DC. Changes in HIV seroprevalence and related behaviors among male injection drug users who do and do not have sex with men: New York City, 1990-1999. *Am J Public Health* 2002 Mar;92(3):382-384.
132. Geter RS. Drug user settings: a crack house typology. *Int J Addict* 1994 Jun;29(8):1015-1027.
133. McCoy H, Inciardi J, Metsch L, Pottieger A, Saum C. Women, Crack, and Crime: Gender Comparisons of Criminal Activity Among Crack Cocaine Users. *Contemporary Drug Problems* 1995;22(3):435-451.
134. Bowser BP, Jenkins-Barnes T, Dillard-Smith C, Lockett G. Harm reduction for drug abusing ex-offenders: outcome of the California Prevention and Education Project MORE project. *J EVID BASED SOC WORK* 2010 2010;7(1-2):15-29.
135. Booth RE, Kwiatkowski CF, Chitwood DD. Sex related HIV risk behaviors: differential risks among injection drug users, crack smokers, and injection drug users who smoke crack. *Drug Alcohol Depend* 2000 Mar 1;58(3):219-226.
136. Nicolosi A, Correa Leite ML, Musicco M, Arici C, Gavazzeni G, Lazzarin A. The efficiency of male-to-female and female-to-male sexual transmission of the human immunodeficiency virus: a study of 730 stable couples. Italian Study Group on HIV Heterosexual Transmission. *Epidemiology* 1994 Nov;5(6):570-575.
137. Padian NS, Shiboski SC, Glass SO, Vittinghoff E. Heterosexual transmission of human immunodeficiency virus (HIV) in northern California: results from a ten-year study. *Am J Epidemiol* 1997 Aug 15;146(4):350-357.
138. Tortu S, Goldstein M, Deren S, Beardsley M, Hamid R, Ziek K. Urban crack users: gender differences in drug abuse, HIV risk and health status... co-published simultaneously in *Women, Drug Use, and HIV Infection* (ed: Sally J. Stevens, Stephanie Tortu, and Susan L. Coyle) The Haworth Medical Press, an imprint of The Haworth Press, Inc., 1998. pp 177-89. *Women Health* 1998;27(1):177-189.
139. El-Bassel N, Schilling RF, Irwin KL, Faruque S, Gilbert L, Von Bargen J, et al. Sex trading and psychological distress among women recruited from the streets of Harlem. *Am J Public Health* 1997 Jan;87(1):66-70.

140. Des Jarlais DC, Friedman SR, Perlis T, Chapman TF, Sotheran JL, Paone D, et al. Risk behavior and HIV infection among new drug injectors in the era of AIDS in New York City. *J Acquir Immune Defic Syndr Hum Retrovirol* 1999 Jan 1;20(1):67-72.
141. Miller M, Neaigus A. Networks, resources and risk among women who use drugs. *Soc Sci Med* 2001 Mar;52(6):967-978.
142. Ickovics JR, Yoshikawa H. Preventive interventions to reduce heterosexual HIV risk for women: current perspectives, future directions. *AIDS* 1998;12 Suppl A:S197-208.
143. Padian NS. Prostitute women and AIDS: epidemiology. *AIDS* 1988 Dec;2(6):413-419.
144. Singer M, Dai H, Weeks MR, Malave D. AIDS risk perception among women drug users in Hartford, CT. *Women Health* 1998;27(1-2):67-85.
145. Nyamathi AM, Stein JA, Swanson JM. Personal, cognitive, behavioral, and demographic predictors of HIV testing and STDs in homeless women. *J Behav Med* 2000 Apr;23(2):123-147.
146. Malta M, Monteiro S, Lima RM, Bauken S, Marco A, Zuim GC, et al. HIV/AIDS risk among female sex workers who use crack in Southern Brazil. *Rev Saude Publica* 2008 Oct;42(5):830-837.
147. El-Bassel N, Gilbert L, Rajah V, Foleno A, Frye V. Fear and violence: raising the HIV stakes. *AIDS Educ Prev* 2000 Apr;12(2):154-170.
148. Pyett PM, Warr DJ. Vulnerability on the streets: female sex workers and HIV risk. *AIDS Care* 1997 Oct;9(5):539-547.
149. Wojcicki JM, Malala J. Condom use, power and HIV/AIDS risk: sex-workers bargain for survival in Hillbrow/Joubert Park/Berea, Johannesburg. *Soc Sci Med* 2001 Jul;53(1):99-121.
150. Erickson PG, Butters J, McGillicuddy P, Hallgren A. Crack and prostitution: Gender, myths, and experiences. *J Drug Iss* 2000 Fal;30(4):767-788.
151. Butters J, Erickson PG. Meeting the health care needs of female crack users: a Canadian example. *Women Health* 2003;37(3):1-17.
152. Falck RS, Wang J, Carlson RG, Siegal HA. Crack-cocaine use and health status as defined by the SF-36. *Addict Behav* 2000 Jul-Aug;25(4):579-584.
153. Strain EC. Assessment and treatment of comorbid psychiatric disorders in opioid-dependent patients. *Clin J Pain* 2002 Jul-Aug;18(4 Suppl):S14-27.
154. Brooner RK, King VL, Kidorf M, Schmidt CW,Jr, Bigelow GE. Psychiatric and substance use comorbidity among treatment-seeking opioid abusers. *Arch Gen Psychiatry* 1997 Jan;54(1):71-80.
155. Darke S, Ross J. Polydrug dependence and psychiatric comorbidity among heroin injectors. *Drug Alcohol Depend* 1997 Nov 25;48(2):135-141.

156. Rosse RB, Collins JP,Jr, Fay-McCarthy M, Alim TN, Wyatt RJ, Deutsch SI. Phenomenologic comparison of the idiopathic psychosis of schizophrenia and drug-induced cocaine and phencyclidine psychoses: a retrospective study. *Clin Neuropsychopharmacol* 1994 Aug;17(4):359-369.
157. Selwyn PA, Hartel D, Wasserman W, Drucker E. Impact of the AIDS epidemic on morbidity and mortality among intravenous drug users in a New York City methadone maintenance program. *Am J Public Health* 1989 Oct;79(10):1358-1362.
158. Kohli R, Lo Y, Howard AA, Buono D, Floris-Moore M, Klein RS, et al. Mortality in an urban cohort of HIV-infected and at-risk drug users in the era of highly active antiretroviral therapy. *Clin Infect Dis* 2005 Sep 15;41(6):864-872.
159. Tortu S, Neaigus A, McMahon J, Hagen D. Hepatitis C among noninjecting drug users: a report. *Subst Use Misuse* 2001 Mar;36(4):523-534.
160. Scheinmann R, Hagan H, Lelutiu-Weinberger C, Stern R, Des Jarlais DC, Flom PL, et al. Non-injection drug use and Hepatitis C Virus: a systematic review. *Drug Alcohol Depend* 2007 Jun 15;89(1):1-12.
161. Gyarmathy VA, Neaigus A, Miller M, Friedman SR, Des Jarlais DC. Risk correlates of prevalent HIV, hepatitis B virus, and hepatitis C virus infections among noninjecting heroin users. *J Acquir Immune Defic Syndr* 2002 Aug 1;30(4):448-456.
162. Osher FC, Goldberg RW, McNary SW, Swartz MS, Essock SM, Butterfield MI, et al. Substance abuse and the transmission of hepatitis C among persons with severe mental illness. *Psychiatric Services* 2003 Jun;54(6):842-847.
163. Collins CLC, Kerr T, Kuyper LM, Li K, Tyndall MW, Marsh DC, et al. Potential uptake and correlates of willingness to use a supervised smoking facility for noninjection illicit drug use. *Journal of Urban Health* 2005;82(2):276-284.
164. Barr CE, Lopez MR, Rua-Dobles A, Miller LK, Mathur-Wagh U, Turgeon LR. HIV-associated oral lesions; immunologic, virologic and salivary parameters. *J Oral Pathol Med* 1992 Aug;21(7):295-298.
165. McCarthy GM, Mackie ID, Koval J, Sandhu HS, Daley TD. Factors associated with increased frequency of HIV-related oral candidiasis. *J Oral Pathol Med* 1991 Aug;20(7):332-336.
166. Patton LL, van der Horst C. Oral infections and other manifestations of HIV disease. *Infect Dis Clin North Am* 1999 Dec;13(4):879-900.
167. Porter J, Bonilla L. Crack users' cracked lips: an additional HIV risk factor. *Am J Public Health* 1993 Oct;83(10):1490-1491.
168. Porter J, Bonilla L, Drucker E. Methods of smoking crack as a potential risk factor for HIV infection: crack smokers' perceptions and behavior. *Contemporary Drug Problems* 1997;24(2):319-347.
169. Hagan H, Thiede H, Des Jarlais DC. HIV/hepatitis C virus co-infection in drug users: risk behavior and prevention. *AIDS* 2005 Oct;19 (Suppl 3):S199-207.

170. Mitchell-Lewis DA, Phelan JA, Kelly RB, Bradley JJ, Lamster IB. Identifying oral lesions associated with crack cocaine use. *J Am Dent Assoc* 1994 Aug;125(8):1104-8, 1110.
171. Lane HC, Holmberg SD, Jaffe HW. HIV seroconversion and oral intercourse. *Am J Public Health* 1991 May;81(5):658.
172. Rozenbaum W, Gharakhanian S, Cardon B, Duval E, Coulaud JP. HIV transmission by oral sex. *Lancet* 1988 Jun 18;1(8599):1395.
173. Rothenberg RB, Scarlett M, del Rio C, Reznik D, O'Daniels C. Oral transmission of HIV. *AIDS* 1998 Nov 12;12(16):2095-2105.
174. Perlman DC, Henman AR, Kochems L, Paone D, Salomon N, Des Jarlais DC. Doing a shotgun: a drug use practice and its relationship to sexual behaviors and infection risk. *Soc Sci Med* 1999 May;48(10):1441-1448.
175. McMahon JM, Tortu S. A potential hidden source of hepatitis C infection among noninjecting drug users. *J Psychoactive Drugs* 2003 Oct-Dec;35(4):455-460.
176. Hermida M, Ferreira MC, Barral S, Laredo R, Castro A, Diz Dios P. Detection of HCV RNA in saliva of patients with hepatitis C virus infection by using a highly sensitive test. *J Virol Methods* 2002 Mar;101(1-2):29-35.
177. Fischer B, Powis J, Firestone Cruz M, Rudzinski K, Rehm J. Hepatitis C virus transmission among oral crack users: viral detection on crack paraphernalia. *Eur J Gastroenterol Hepatol* 2008 Jan;20(1):29-32.
178. Nyamathi AM, Dixon EL, Robbins W, Smith C, Wiley D, Leake B, et al. Risk factors for hepatitis C virus infection among homeless adults. *J Gen Intern Med* 2002 Feb;17(2):134-143.
179. Neaigus A, Gyarmathy VA, Zhao M, Miller M, Friedman SR, Des Jarlais DC. Sexual and other noninjection risks for HBV and HCV seroconversions among noninjecting heroin users. *J Infect Dis* 2007 Apr 1;195(7):1052-1061.
180. De P, Roy E, Boivin JF, Cox J, Morissette C. Risk of hepatitis C virus transmission through drug preparation equipment: a systematic and methodological review. *J Viral Hepat* 2008 Apr;15(4):279-292.
181. Jauffret-Roustide M, Le Strat Y, Couturier E, Thierry D, Rondy M, Quaglia M, et al. A national cross-sectional study among drug-users in France: Epidemiology of HCV and highlight on practical and statistical aspects of the design. .
182. Howe CJ, Fuller CM, Ompad DC, Galea S, Koblin B, Thomas D, et al. Association of sex, hygiene and drug equipment sharing with hepatitis C virus infection among non-injecting drug users in New York City. *Drug & Alcohol Dependence* 2005 Sep 1;79(3):389-395.
183. DeBeck K, Kerr T, Li K, Fischer B, Buxton J, Montaner J, et al. Smoking of crack cocaine as a risk factor for HIV infection among people who use injection drugs. *CMAJ* 2009 Oct 27;181(9):585-589.

184. Ouellet LJ, Thorpe LE, Huo D, Bailey SL, Jimenez AD, Johnson WA, et al. Prevalence and incidence of HIV among out-of-treatment injecting drug users, Chicago 1994-1996. *Journal of Acquired Immune Deficiency Syndromes: JAIDS* 2000 Dec 15;25(5):443-450.
185. Miller CL, Strathdee SA, Kerr T, Li K, Wood E. Factors associated with early adolescent initiation into injection drug use: implications for intervention programs. *J Adolesc Health* 2006 Apr;38(4):462-464.
186. Rachlis BS, Wood E, Zhang R, Montaner JS, Kerr T. High rates of homelessness among a cohort of street-involved youth. *Health Place* 2009 Mar;15(1):10-17.
187. Rhodes T, Kimber J, Small W, Fitzgerald J, Kerr T, Hickman M, et al. Public injecting and the need for 'safer environment interventions' in the reduction of drug-related harm. *Addiction* 2006 Oct;101(10):1384-1393.
188. Shannon K, Ishida T, Morgan R, Bear A, Oleson M, Kerr T, et al. Potential community and public health impacts of medically supervised safer smoking facilities for crack cocaine users. .
189. Shannon K, Kerr T, Bright V, Gibson K, Tyndall MW. Drug sharing with clients as a risk marker for increased violence and sexual and drug-related harms among survival sex workers. *AIDS Care* 2008 Feb;20(2):235-241.
190. Malchy L, Bungay V, Johnson J. Documenting practices and perceptions of 'safer' crack use: A Canadian pilot study. *International Journal of Drug Policy* 2008 Aug;19(4):339-341.
191. Ashery RS, Carlson RG, Falck RS, Siegal HA. Injection drug users, crack-cocaine users, and human services utilization: an exploratory study. *Soc Work* 1995 Jan;40(1):75-82.
192. Cohen MH, Cook JA, Grey D, Young M, Hanau LH, Tien P, et al. Medically eligible women who do not use HAART: the importance of abuse, drug use, and race. *Am J Public Health* 2004 Jul;94(7):1147-1151.
193. Deren S, Estrada A, Stark M, Williams M, Goldstein M. A multisite study of sexual orientation and injection drug use as predictors of HIV serostatus in out-of-treatment male drug users. *J Acquir Immune Defic Syndr Hum Retrovirol* 1997 Aug 1;15(4):289-295.
194. Gerbert B, Maguire BT, Bleecker T, Coates TJ, McPhee SJ. Primary care physicians and AIDS. Attitudinal and structural barriers to care. *JAMA* 1991 Nov 27;266(20):2837-2842.
195. Poland ML, Dombrowski MP, Ager JW, Sokol RJ. Punishing pregnant drug users: enhancing the flight from care. *Drug Alcohol Depend* 1993 Feb;31(3):199-203.
196. Wight RG, LeBlanc AJ, Aneshensel CS. Support service use by persons with AIDS and their caregivers. *AIDS Care* 1995;7(4):509-520.
197. Chuang HT, Atkinson M. AIDS knowledge and high-risk behaviour in the chronically mentally ill. *Can J Psychiatry* 1996 Jun;41(5):269-272.

198. Booth RE, Kwiatkowski CF, Weissman G. Health-related service utilization and HIV risk behaviors among HIV infected injection drug users and crack smokers. *Drug Alcohol Depend* 1999 Jun;55(1-2):69-78.
199. Chitwood DD, McBride DC, French MT, Comerford M. Health care need and utilization: a preliminary comparison of injection drug users, other illicit drug users, and nonusers. *Subst Use Misuse* 1999 Mar-Apr;34(4-5):727-746.
200. Colliver JD, Kopstein AN. Trends in cocaine abuse reflected in emergency room episodes reported to DAWN. Drug Abuse Warning Network. *Public Health Rep* 1991 Jan-Feb;106(1):59-68.
201. Nunes CLX, Andrade T, Galvao-Castro B, Bastos FI, Reingold A. Assessing risk behaviors and prevalence of sexually transmitted and blood-borne infections among female crack cocaine users in Salvador - Bahia, Brazil. *Brazilian Journal of Infectious Diseases* 2007 Dec;11(6):561-566.
202. Tinsman PD, Bullman S, Chen X, Burgdorf K, Herrell JM. Factors affecting client response to HIV outreach efforts. *J Subst Abuse* 2001;13(1-2):201-214.
203. Eldridge GD, St Lawrence JS, Little CE, Shelby MC, Brasfield TL, Service JW, et al. Evaluation of the HIV risk reduction intervention for women entering inpatient substance abuse treatment. *AIDS Educ Prev* 1997 Feb;9(1 Suppl):62-76.
204. Anderson KH, Mitchell JM. Differential access in the receipt of antiretroviral drugs for the treatment of AIDS and its implications for survival. *Arch Intern Med* 2000 Nov 13;160(20):3114-3120.
205. Kalichman SC, Graham J, Luke W, Austin J. Perceptions of health care among persons living with HIV/AIDS who are not receiving antiretroviral medications. *AIDS Patient Care STDS* 2002 May;16(5):233-240.
206. Shapiro MF, Morton SC, McCaffrey DF, Senterfitt JW, Fleishman JA, Perlman JF, et al. Variations in the care of HIV-infected adults in the United States: results from the HIV Cost and Services Utilization Study. *JAMA* 1999 Jun 23-30;281(24):2305-2315.
207. Allen MH. Primary care of women infected with the human immunodeficiency virus. *Obstet Gynecol Clin North Am* 1990 Sep;17(3):557-569.
208. Crystal S. Health-care barriers and utilization patterns among intravenous drug users with HIV disease. *AIDS and Public Policy Journal* 1992;7:187-198.
209. Moore RD, Hidalgo J, Sugland BW, Chaisson RE. Zidovudine and the natural history of the acquired immunodeficiency syndrome. *N Engl J Med* 1991 May 16;324(20):1412-1416.
210. Hellinger FJ. The use of health services by women with HIV infection. *Health Serv Res* 1993 Dec;28(5):543-561.
211. Metsch LR, Pereyra M, Messinger S, Del Rio C, Strathdee SA, Anderson-Mahoney P, et al. HIV transmission risk behaviors among HIV-infected persons who are successfully linked to care. *Clinical Infectious Diseases* 2008 15 Aug;47(4):577-584.

212. Brewer TH, Zhao W, Pereyra M, del Rio C, Loughlin A, AndersonMahoney P, et al. Initiating HIV care: Attitudes and perceptions of HIV positive crack cocaine users. *AIDS and Behavior* 2007 Nov;11(6):897-904.
213. Metsch LR, Bell C, Pereyra M, Cardenas G, Sullivan T, Rodriguez A, et al. Hospitalized HIV-infected patients in the era of highly active antiretroviral therapy. *Am J Public Health* 2009 01 Jun;99(6):1045-1049.
214. Fisher JD, Fisher WA, Cornman DH, Amico RK, Bryan A, Friedland GH. Clinician-delivered intervention during routine clinical care reduces unprotected sexual behavior among HIV-infected patients. *J Acquir Immune Defic Syndr* 2006 Jan 1;41(1):44-52.
215. Richardson JL, Milam J, McCutchan A, Stoyanoff S, Bolan R, Weiss J, et al. Effect of brief safer-sex counseling by medical providers to HIV-1 seropositive patients: a multi-clinic assessment. *AIDS* 2004 May 21;18(8):1179-1186.
216. World Health Organization. Antiretroviral therapy – HIV/AIDS. 2011; Available at: <http://www.who.int/hiv/topics/treatment/en/>. Accessed 04/06, 2011.
217. Canadian AIDS Society. Responding to the Epidemic: Recommendations for a Canadian Hepatitis C Strategy. 2005;1.
218. Hsu LC, Vittinghoff E, Katz MH, Schwarcz SK. Predictors of use of highly active antiretroviral therapy (HAART) among persons with AIDS in San Francisco, 1996-1999. *J Acquir Immune Defic Syndr* 2001 Dec 1;28(4):345-350.
219. Bogart LM, Kelly JA, Catz SL, Sosman JM. Impact of medical and nonmedical factors on physician decision making for HIV/AIDS antiretroviral treatment. *J Acquir Immune Defic Syndr* 2000 Apr 15;23(5):396-404.
220. Bassetti S, Battegay M, Furrer H, Rickenbach M, Flepp M, Kaiser L, et al. Why is highly active antiretroviral therapy (HAART) not prescribed or discontinued? Swiss HIV Cohort Study. *J Acquir Immune Defic Syndr* 1999 Jun 1;21(2):114-119.
221. Wilson TE, Barron Y, Cohen M, Richardson J, Greenblatt R, Sacks HS, et al. Adherence to antiretroviral therapy and its association with sexual behavior in a national sample of women with human immunodeficiency virus. *Clin Infect Dis* 2002 Feb 15;34(4):529-534.
222. Chesney MA. Factors affecting adherence to antiretroviral therapy. *Clin Infect Dis* 2000 Jun;30 Suppl 2:S171-6.
223. Berg KM, Demas PA, Howard AA, Schoenbaum EE, Gourevitch MN, Arnsten JH. Gender differences in factors associated with adherence to antiretroviral therapy. *J Gen Intern Med* 2004 Nov;19(11):1111-1117.
224. Sollitto S, Mehlman M, Youngner S, Lederman MM. Should physicians withhold highly active antiretroviral therapies from HIV-AIDS patients who are thought to be poorly adherent to treatment? *AIDS* 2001 Jan 26;15(2):153-159.
225. Carlson JL, Sugano E, Millstein SG, Auerswald CL. Service utilization and the life cycle of youth homelessness. *J Adolesc Health* 2006 May;38(5):624-627.

226. George N, Green J, Murphy S. Sexually transmitted disease rates before and after HIV testing. *Int J STD AIDS* 1998 May;9(5):291-293.
227. Fischer PJ, Breakey WR. The epidemiology of alcohol, drug, and mental disorders among homeless persons. *Am Psychol* 1991 Nov;46(11):1115-1128.
228. Smereck GAD, Hockman EM. Prevalence of HIV infection and HIV risk behaviors associated with living place: On-the-street homeless drug users as a special target population for public health intervention. *Am J Drug Alcohol Abuse* 1998 May;24(2):299-319.
229. Benda B. Crime, drug use and mental illness: a comparison of homeless men and women. *Journal of Social Service Research* 1990;13:39-60.
230. Nyamathi A, Leake B, Keenan C, Gelberg L. Type of social support among homeless women: its impact on psychosocial resources, health and health behaviors, and use of health services. *Nurs Res* 2000 Nov-Dec;49(6):318-326.
231. Wechsberg WM, Lam WKK, Zule WA, Bobashev G. Efficacy of a Woman-Focused Intervention to Reduce HIV Risk and Increase Self-Sufficiency Among African American Crack Abusers. *Am J Public Health* 2004 Jul;94(7):1165-1173.
232. Martijn C, Sharpe L. Pathways to youth homelessness. *Soc Sci Med* 2006 Jan;62(1):1-12.
233. Goering P, Tolomiczenko G, Sheldon T, Boydell K, Wasylenki D. Characteristics of persons who are homeless for the first time. *Psychiatr Serv* 2002 Nov;53(11):1472-1474.
234. Klein JD, Woods AH, Wilson KM, Prospero M, Greene J, Ringwalt C. Homeless and runaway youths' access to health care. *J Adolesc Health* 2000 Nov;27(5):331-339.
235. Nwakeze PC, Magura S, Rosenblum A, Joseph H. Homelessness, substance misuse, and access to public entitlements in a soup kitchen population. *Subst Use Misuse* 2003 Feb-May;38(3-6):645-668.
236. Aidala A, Cross JE, Stall R, Harre D, Sumartojo E. Housing status and HIV risk behaviors: implications for prevention and policy. *AIDS Behav* 2005 Sep;9(3):251-265.
237. Rowan-Szal G, Joe G, Simpson D. Treatment retention of crack and cocaine users in a national sample of long term residential clients. *Addiction Research* 2000;8:7-14.
238. DeMaria PA, Jr, Sterling R, Weinstein SP. The effect of stimulant and sedative use on treatment outcome of patients admitted to methadone maintenance treatment. *Am J Addict* 2000 Spring;9(2):145-153.
239. Deren S, Kotranski L, Beardsley M, Collier K, Tortu S, Semaan S, et al. Crack users in East Harlem, New York and Philadelphia, Pennsylvania: HIV-related risk behaviors and predictors of serostatus. *Am J Drug Alcohol Abuse* 1997 Nov;23(4):555-567.
240. Fischer B, Rehm J, Brissette S, Brochu S, Bruneau J, El-Guebaly N, et al. Illicit opioid use in Canada: comparing social, health, and drug use characteristics of

- untreated users in five cities (OPICAN study). *Journal of Urban Health* 2005 Jun;82(2):250-266.
241. Weisner C, Schmidt LA. Expanding the frame of health services research in the drug abuse field. *Health Serv Res* 1995 Dec;30(5):707-726.
 242. Gregoire TK. Factors associated with level of care assignment in substance abuse treatment. *J Subst Abuse Treat* 2000 Apr;18(3):241-248.
 243. Thompson AS, Blankenship KM, Selwyn PA, Khoshnood K, Lopez M, Balacos K, et al. Evaluation of an innovative program to address the health and social service needs of drug-using women with or at risk for HIV infection. *J Community Health* 1998 Dec;23(6):419-440.
 244. Broome KM, Simpson DD, Joe GW. Patient and program attributes related to treatment process indicators in DATOS. *Drug Alcohol Depend* 1999 Dec 1;57(2):127-135.
 245. Millson P, Myers T, Calzavara L, Wallace E, Major C, Degani N. Regional variation in HIV prevalence and risk behaviours in Ontario injection drug users (IDU). *Canadian Journal of Public Health. Revue Canadienne de Sante Publique* 2003;94(6):431-435.
 246. Wechsberg WM, Lam WK, Zule W, Hall G, Middlesteadt R, Edwards J. Violence, homelessness, and HIV risk among crack-using African-American women. *Subst Use Misuse* 2003 Feb-May;38(3-6):669-700.
 247. O'Brien CP, Alterman A, Walter D, Childress AR, McLellan AT. Evaluation of treatment for cocaine dependence. *NIDA Res Monogr* 1989;95:78-84.
 248. Weisner C, Matzger H, Tam T, Schmidt L. Who goes to alcohol and drug treatment? Understanding utilization within the context of insurance. *J Stud Alcohol* 2002 Nov;63(6):673-682.
 249. Cottler LB, Leukefeld C, Hoffman J, Desmond D, Wechsberg W, Inciardi JA, et al. Effectiveness of HIV risk reduction initiatives among out-of-treatment non-injection drug users. *J Psychoactive Drugs* 1998 Jul-Sep;30(3):279-290.
 250. Sterk CE, Elifson KW, Theall KP. Individual action and community context: the Health Intervention Project. *Am J Prev Med* 2007 Jun;32(6 Suppl):S177-81.
 251. Weeks MR, Li J, Dickson Gomez J, Convey M, Martinez M, Radda K, et al. Outcomes of a peer HIV prevention program with injection drug and crack users: The risk avoidance partnership. *Subst Use Misuse* 2009;44(2):253-281.
 252. van der Poel A, Barendregt C, van de Mheen D. Drug consumption rooms in rotterdam: an explorative description. *Eur Addict Res* 2003 Apr;9(2):94-100.
 253. Kimber J, Dolan K, van Beek I, Hedrich D, Zurhold H. Drug consumption facilities: an update since 2000. *Drug Alcohol Rev* 2003 Jun;22(2):227-233.
 254. Stoevers H. Consumption Rooms--A Middle Ground Between Health and Public Order Concerns. *Journal of Drug Issues* 2002;32(2):597-606.

255. Wood E, Kerr T, Small W, Li K, Marsh DC, Montaner JS, et al. Changes in public order after the opening of a medically supervised safer injecting facility for illicit injection drug users. *CMAJ* 2004 Sep 28;171(7):731-734.
256. de Jong W, Weber U. The professional acceptance of drug use: a closer look at drug consumption rooms in the Netherlands, Germany and Switzerland. *International Journal of Drug Policy* 1999 4/1;10(2):99-108.
257. Chitwood DD, McCoy CB, Inciardi JA, McBride DC, Comerford M, Trapido E, et al. HIV seropositivity of needles from shooting galleries in south Florida. *Am J Public Health* 1990 Feb;80(2):150-152.
258. Dolan K, Kimber J, Fry C, Fitzgerald J, McDonald D, Trautmann F. Drug Consumption Facilities in Europe and the Establishment of Supervised Injecting Centres in Australia. *Drug and Alcohol Review* 2000;19(3):337-346.
259. Pottieger AE, Tressell PA, Inciardi JA, Rosales TA. Cocaine use patterns and overdose. *J Psychoactive Drugs* 1992 Oct-Dec;24(4):399-410.
260. Kerr T, Tyndall M, Li K, Montaner J, Wood E. Safer injection facility use and syringe sharing in injection drug users. *Lancet* 2005 Jul 23-29;366(9482):316-318.
261. Wood E, Spittal PM, Small W, Kerr T, Li K, Hogg RS, et al. Displacement of Canada's largest public illicit drug market in response to a police crackdown. *CMAJ* 2004 May 11;170(10):1551-1556.
262. Collins CLC, Kerr T, Tyndall MW, Marsh DC, Kretz PS, Montaner JS, et al. Rationale to evaluate medically supervised safer smoking facilities for non-injection illicit drug users. *Canadian Journal of Public Health* 2005 Sep;96(5):344-347.
263. Fuller CM, Vlahov D, Latkin CA, Ompad DC, Celentano DD, Strathdee SA. Social circumstances of initiation of injection drug use and early shooting gallery attendance: implications for HIV intervention among adolescent and young adult injection drug users. *J Acquir Immune Defic Syndr* 2003 Jan 1;32(1):86-93.
264. Vlahov D, Fuller CM, Ompad DC, Galea S, Des Jarlais DC. Updating the infection risk reduction hierarchy: preventing transition into injection. *J Urban Health* 2004 Mar;81(1):14-19.
265. Broadhead R, Kerr T, Altice F. Safer injection facilities in North America: their place in public policy and health initiatives. *Journal of Drug Issues* 2002;32(1):329-55.
266. Government of Canada. The National Anti-Drug Strategy. 2009; Available at: <http://nationalantidrugstrategy.gc.ca/nads-sna.html>. Accessed 01/04, 2010.
267. Boyd S, Johnson JL, Moffat B. Opportunities to learn and barriers to change: Crack cocaine use in the Downtown Eastside of Vancouver. *Harm Reduction Journal* 2008;5 No:Art 34-12.
268. Beltrami JF, Vermund SH, Fawal HJ, Moon TD, Von Bargen JC, Holmberg SD. HIV/AIDS in nonurban Alabama: risk activities and access to services among HIV-infected persons. *South Med J* 1999 Jul;92(7):677-683.

269. Vancouver Coastal Health. Insite - Supervised Injection Site: Research Results. 2010; Available at: <http://supervisedinjection.vch.ca/research.htm>. Accessed 01/04, 2010.
270. Boyd S, Johnson JL, Moffat B. Opportunities to learn and barriers to change: crack cocaine use in the Downtown Eastside of Vancouver. *Harm Reduct J* 2008 Nov 17;5:34.
271. Green J, Britten N. Qualitative research and evidence based medicine. *BMJ* 1998 Apr 18;316(7139):1230-1232.
272. Morse JM. *Qualitative Health Research*. London, UK: SAGE Publications; 1992.
273. Morse JM, Field PA. *Qualitative Research Methods for Health Professionals*, Second Edition. London, UK: SAGE Publications; 1995.
274. Simon C, Mosavel M. Community members as recruiters of human subjects: ethical considerations. *Am J Bioeth* 2010 Mar;10(3):3-11.
275. Bean S, Silva DS. Betwixt & between: peer recruiter proximity in community-based research. *Am J Bioeth* 2010 Mar;10(3):18-19.
276. Anderson EE. The role of community-based organizations in the recruitment of human subjects: ethical considerations. *Am J Bioeth* 2010 Mar;10(3):20-21.
277. Strike C, Leonard L, Millson M, Anstice S, Berkeley N, Medd E. Ontario needle exchange programmes: Best practice recommendations. 2006.

6.0 APPENDICES

APPENDIX A	Electronic Database Search Strategy
APPENDIX B	Relevancy Testing Form
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APPENDIX G	Letter of Ethical Approval from The Ottawa Hospital Research Ethics Board

APPENDIX A

Electronic Database Search Strategy

EMBASE

1. **cocaine/**
2. **cocaine dependence/**
3. **freebase.mp.** [mp=title, abstract, subject headings, heading word, drug trade name, original title, device manufacturer, drug manufacturer name]
4. **(chas* adj2 dragon).mp.** [mp=title, abstract, subject headings, heading word, drug trade name, original title, device manufacturer, drug manufacturer name]
5. **(rock adj2 cocaine).mp.** [mp=title, abstract, subject headings, heading word, drug trade name, original title, device manufacturer, drug manufacturer name]
6. **crack.mp.** [mp=title, abstract, subject headings, heading word, drug trade name, original title, device manufacturer, drug manufacturer name]
7. **cocaine.mp.** [mp=title, abstract, subject headings, heading word, drug trade name, original title, device manufacturer, drug manufacturer name]
8. or/1-7
9. **risk reduction/**
10. **high risk behavior/**
11. **harm reduction/** or **health care policy/**
12. **health care quality/**
13. **health care policy/**
14. **pilot study/**
15. **health education/**
16. **health care delivery/**
17. **health care facility/**
18. **(harm adj2 reduction).mp.** [mp=title, abstract, subject headings, heading word, drug trade name, original title, device manufacturer, drug manufacturer name]
19. **(supervised adj2 (inhalation or consumption or drug or smoking)).mp.** [mp=title, abstract, subject headings, heading word, drug trade name, original title, device manufacturer, drug manufacturer name]
20. **((safe or safer) adj2 (inhalation or consumption or drug or smoking)).mp.** [mp=title, abstract, subject headings, heading word, drug trade name, original title, device manufacturer, drug manufacturer name]
21. **(facilit* or center or centre or site or room).mp.** [mp=title, abstract, subject headings, heading word, drug trade name, original title, device manufacturer, drug manufacturer name]
22. 19 or 20
23. 21 and 22
24. 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 23
25. 8 and 24

Medline

1. **cocaine/** or **crack cocaine/**
2. **Cocaine-Related Disorders/**
3. **freebase.mp.** [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]
4. **(rock adj2 cocaine).mp.** [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]
5. **(chas* adj2 dragon).mp.** [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]
6. **crack.mp.** [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]
7. **cocaine.mp.** [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]
8. or/1-7
9. **risk reduction behavior/** or **risk-taking/**
10. **Harm Reduction/**
11. **pilot projects/** or **program evaluation/**
12. **Health Policy/**
13. **Public Health Practice/**
14. **Health Education/**
15. **Health Services Accessibility/**
16. **Health Facilities/**
17. **(harm adj2 reduction).mp.** [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]
18. **((safe* or supervised) adj2 (consumption or smoking or drug or inhalation)).mp.** [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]
19. **(facilit* or center or centre or site or room).mp.** [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]
20. 18 and 19
21. 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 20
22. 8 and 21
23. limit 22 to english language
24. limit 22 to french
25. 23 or 24

APPENDIX B

Relevancy Testing Form

RELEVANCY TESTING FORM
Systematic Review (Smith, Kate – Thesis)

Article Number: _____

Date Reviewed: _____

1. Does the article include crack cocaine either as a focus of the article? **OR**
Does the article address crack cocaine as an outcome variable identified during analysis?
_____Y _____N

2. Is the article written in English?
_____Y _____N

3. Are the outcomes or findings in the article related to either healthcare, drug treatment, or harm reduction among people who smoke crack?
_____Y _____N

4. Is the article a primary study or review? **OR**
Is the article considered grey literature and relevant to harm reduction in Canada?
_____Y _____N

5. Does article fulfill all FOUR criteria for inclusion in systematic review?
_____Y _____N

APPENDIX C

Articles Included in Systematic Review

- Adimora AA, Schoenbach VJ, Martinson FEA, Coyne-Beasley T, Doherty I, Stancil TR, et al. Heterosexually transmitted HIV infection among African Americans in North Carolina. *J Acquir Immune Defic Syndr* 2006 Apr;41(5):616-623.
- Alpert PL, Shuter J, DeShaw MG, Webber MP, Klein RS. Factors associated with unrecognized HIV-1 infection in an inner-city emergency department. *Ann Emerg Med* 1996 Aug;28(2):159-164.
- Ashery RS, Carlson RG, Falck RS, Siegal HA. Injection drug users, crack-cocaine users, and human services utilization: an exploratory study. *Soc Work* 1995 Jan;40(1):75-82.
- Beltrami JF, Vermund SH, Fawal HJ, Moon TD, Von Bargen JC, Holmberg SD. HIV/AIDS in nonurban Alabama: risk activities and access to services among HIV-infected persons. *South Med J* 1999 Jul;92(7):677-683.
- Berg KM, Demas PA, Howard AA, Schoenbaum EE, Gourevitch MN, Arnsten JH. Gender differences in factors associated with adherence to antiretroviral therapy. *J Gen Intern Med* 2004 Nov;19(11):1111-1117.
- Booth RE, Kwiatkowski CF, Chitwood DD. Sex related HIV risk behaviors: differential risks among injection drug users, crack smokers, and injection drug users who smoke crack. *Drug Alcohol Depend* 2000 Mar 1;58(3):219-226.
- Booth RE, Kwiatkowski CF, Weissman G. Health-related service utilization and HIV risk behaviors among HIV infected injection drug users and crack smokers. *Drug Alcohol Depend* 1999 Jun;55(1-2):69-78.
- Booth RE, Watters JK, Chitwood DD. HIV risk-related sex behaviors among injection drug users, crack smokers, and injection drug users who smoke crack. *Am J Public Health* 1993 Aug;83(8):1144-1148.
- Booth RE. Gender differences in high-risk sex behaviors among heterosexual drug injectors and crack smokers. *Am J Drug Alcohol Abuse* 1995 Nov;21(4):419-432.
- Bornovalova MA, Daughters SB, Hernandez GD, Richards JB, Lejuez CW. Differences in impulsivity and risk-taking propensity between primary users of crack cocaine and primary users of heroin in a residential substance-use program. *Exp Clin Psychopharmacol* 2005 Nov;13(4):311-318.
- Bowser BP, Jenkins-Barnes T, Dillard-Smith C, Lockett G. Harm reduction for drug abusing ex-offenders: outcome of the California Prevention and Education Project MORE project. *J EVID BASED SOC WORK* 2010;7(1-2):15-29.
- Bowser BP. Crack and AIDS: an ethnographic impression. *J Natl Med Assoc* 1989 May;81(5):538-540.
- Boyd CJ, Mieczkowski T. Drug use, health, family and social support in "crack" cocaine users. *Addict Behav* 1990;15(5):481-485.

- Boyd S, Johnson JL, Moffat B. Opportunities to learn and barriers to change: Crack cocaine use in the Downtown Eastside of Vancouver. *Harm Reduction Journal* 2008;5 No:Art 34-12.
- Brewer TH, Zhao W, Metsch LR, Coltes A, Zenilman J. High-risk behaviors in women who use crack: knowledge of HIV serostatus and risk behavior. *Ann Epidemiol* 2007 Jul;17(7):533-539.
- Brewer TH, Zhao W, Pereyra M, del Rio C, Loughlin A, AndersonMahoney P, et al. Initiating HIV care: Attitudes and perceptions of HIV positive crack cocaine users. *AIDS and Behavior* 2007 Nov;11(6):897-904.
- Broadhead RS, van Hulst Y, Heckathorn DD. The impact of a needle exchange's closure. *Public Health Rep* 1999 Sep-Oct;114(5):439-447.
- Butterfield MI, Bosworth HB, Meador KG, Stechuchak KM, Essock SM, Osher FC, et al. Gender differences in hepatitis C infection and risks among persons with severe mental illness. *Psychiatr Serv* 2003 Jun;54(6):848-853.
- Butterfield MI, Bosworth HB, Stechuchak KM, Frothingham R, Bastian LA, Meador KG, et al. Racial differences in hepatitis B and hepatitis C and associated risk behaviors in veterans with severe mental illness. *J Natl Med Assoc* 2004 Jan;96(1):43-52.
- Butters J, Erickson PG. Meeting the health care needs of female crack users: a Canadian example. *Women Health* 2003;37(3):1-17.
- Carlson RG, Falck RS, Wang J, Siegal HA, Rahman A. HIV needle risk behaviors and drug use: A comparison of crack-smoking and nonsmoking injection drug users in Ohio. *J Psychoactive Drugs* 1999 Jul-Sep;31(3):291-297.
- Chesney MA. Factors affecting adherence to antiretroviral therapy. *Clin Infect Dis* 2000 Jun;30 Suppl 2:S171-6.
- Cleghorn FR, Jack N, Murphy JR, Edwards J. HIV-1 prevalence and risk factors among sexually transmitted disease clinic attenders in Trinidad. *AIDS* 1995 Apr;9(4):389-394.
- Cohen MH, Cook JA, Grey D, Young M, Hanau LH, Tien P, et al. Medically eligible women who do not use HAART: the importance of abuse, drug use, and race. *Am J Public Health* 2004 Jul;94(7):1147-1151.
- Collins CLC, Kerr T, Kuyper LM, Li K, Tyndall MW, Marsh DC, et al. Potential uptake and correlates of willingness to use a supervised smoking facility for noninjection illicit drug use. *Journal of Urban Health* 2005;82(2):276-284.
- Collins CLC, Kerr T, Tyndall MW, Marsh DC, Kretz PS, Montaner JS, et al. Rationale to evaluate medically supervised safer smoking facilities for non-injection illicit drug users. *Canadian Journal of Public Health* 2005 Sep;96(5):344-347.
- Colliver JD, Kopstein AN. Trends in cocaine abuse reflected in emergency room episodes reported to DAWN. Drug Abuse Warning Network. *Public Health Rep* 1991 Jan-Feb;106(1):59-68.
- Compton WM. Cocaine use and HIV risk in out of treatment drug abusers. *Drug & Alcohol Dependence* 2000 Mar 1;58(3):215-218.

Cottler LB, Leukefeld C, Hoffman J, Desmond D, Wechsberg W, Inciardi JA, et al. Effectiveness of HIV risk reduction initiatives among out-of-treatment non-injection drug users. *J Psychoactive Drugs* 1998 Jul-Sep;30(3):279-290.

Cunningham CO, Sohler NL, Berg KM, Shapiro S, Heller D. Type of Substance Use and Access to HIV-Related Health Care. *AIDS Patient Care STDS* 2006 Jun;20(6):399-407.

Davis WR, Johnson BD, Randolph D, Liberty HJ. Risks for HIV infection among users and sellers of crack, powder cocaine and heroin in central Harlem: implications for interventions. *AIDS Care* 2006 Feb;18(2):158-165.

Day M, Devieux JG, Reid SD, Jones DJ, Meharris J, Malow RM. Risk behaviours and healthcare needs of homeless drug users in Saint Lucia and Trinidad. *ABNF J* 2004 Nov-Dec;15(6):121-126.

De Jong W, Weber U. The professional acceptance of drug use: a closer look at drug consumption rooms in the Netherlands, Germany and Switzerland. *International Journal of Drug Policy* 1999 4/1;10(2):99-108.

De P, Roy E, Boivin JF, Cox J, Morissette C. Risk of hepatitis C virus transmission through drug preparation equipment: a systematic and methodological review. *J Viral Hepat* 2008 Apr;15(4):279-292.

DeBeck K, Kerr T, Li K, Fischer B, Buxton J, Montaner J, et al. Smoking of crack cocaine as a risk factor for HIV infection among people who use injection drugs. *CMAJ* 2009 Oct 27;181(9):585-589.

Deren S, Kang SY, Colon HM, Andia JF, Robles RR. HIV incidence among high-risk Puerto Rican drug users: a comparison of East Harlem, New York, and Bayamon, Puerto Rico. *J Acquir Immune Defic Syndr* 2004 Aug 15;36(5):1067-1074.

Deren S, Kotranski L, Beardsley M, Collier K, Tortu S, Semaan S, et al. Crack users in East Harlem, New York and Philadelphia, Pennsylvania: HIV-related risk behaviors and predictors of serostatus. *Am J Drug Alcohol Abuse* 1997 Nov;23(4):555-567.

Des Jarlais DC, Friedman SR, Perlis T, Chapman TF, Sotheran JL, Paone D, et al. Risk behavior and HIV infection among new drug injectors in the era of AIDS in New York City. *J Acquir Immune Defic Syndr Hum Retrovirol* 1999 Jan 1;20(1):67-72.

DicksonGomez J, Bodnar G, Guevara A, Rodriguez K, Gaborit M. Crack use sites and HIV risk in El Salvador. *J Drug Iss* 2007 Spr;37(2):445-474.

Dolan K, Kimber J, Fry C, Fitzgerald J, McDonald D, Trautmann F. Drug Consumption Facilities in Europe and the Establishment of Supervised Injecting Centres in Australia. *Drug and Alcohol Review* 2000;19(3):337-346.

Edlin BR, Irwin KL, Faruque S, McCoy CB, Word C, Serrano Y, et al. Intersecting epidemics--crack cocaine use and HIV infection among inner-city young adults. Multicenter Crack Cocaine and HIV Infection Study Team. *N Engl J Med* 1994 Nov 24;331(21):1422-1427.

El-Bassel N, Gilbert L, Witte S, Wu E, Gaeta T, Schilling R, et al. Intimate partner violence and substance abuse among minority women receiving care from an inner-city emergency department. *Womens Health Issues* 2003 Jan-Feb;13(1):16-22.

El-Bassel N, Schilling RF, Irwin KL, Faruque S, Gilbert L, Von Bargen J, et al. Sex trading and psychological distress among women recruited from the streets of Harlem. *Am J Public Health* 1997 Jan;87(1):66-70.

Erickson PG, Butters J, McGillicuddy P, Hallgren A. Crack and prostitution: Gender, myths, and experiences. *J Drug Iss* 2000 Fal;30(4):767-788.

Falck RS, Wang J, Carlson RG, Siegal HA. Crack-cocaine use and health status as defined by the SF-36. *Addict Behav* 2000 Jul-Aug;25(4):579-584.

Falck RS, Wang J, Siegal HA, Carlson RG. Current physical health problems and their predictors among a community sample of crack-cocaine smokers in Ohio. *J Psychoactive Drugs* 2003 Oct-Dec;35(4):471-478.

Faruque S, Edlin BR, McCoy CB, Word CO, Larsen SA, Schmid DS, et al. Crack cocaine smoking and oral sores in three inner-city neighborhoods. *J Acquir Immune Defic Syndr Hum Retrovirol* 1996 Sep;13(1):87-92.

Ferri CP, Gossop M, Laranjeira RR. High dose cocaine use in Sao Paulo: a comparison of treatment and community samples. *Subst Use Misuse* 2001 Feb;36(3):237-255.

Fischer B, Powis J, Firestone Cruz M, Rudzinski K, Rehm J. Hepatitis C virus transmission among oral crack users: viral detection on crack paraphernalia. *Eur J Gastroenterol Hepatol* 2008 Jan;20(1):29-32

Fischer B, Rehm J, Brissette S, Brochu S, Bruneau J, El-Guebaly N, et al. Illicit opioid use in Canada: comparing social, health, and drug use characteristics of untreated users in five cities (OPICAN study). *Journal of Urban Health* 2005 Jun;82(2):250-266.

Fischer B, Rehm J, Patra J, Kalousek K, Haydon E, Tyndall M, et al. Crack across Canada: Comparing crack users and crack non-users in a Canadian multi-city cohort of illicit opioid users. *Addiction* 2006 Dec;101(12):1760-1770.

Freeman RC, Collier K, Parillo KM. Early life sexual abuse as a risk factor for crack cocaine use in a sample of community-recruited women at high risk for illicit drug use. *Am J Drug Alcohol Abuse* 2002;28(1):109-131.

Friedman SR, Flom PL, Kottiri BJ, Zenilman J, Curtis R, Neaigus A, et al. Drug use patterns and infection with sexually transmissible agents among young adults in a high-risk neighbourhood in New York City. *Addiction* 2003 02;98(2):159-169.

Fuller CM, Vlahov D, Latkin CA, Ompad DC, Celentano DD, Strathdee SA. Social circumstances of initiation of injection drug use and early shooting gallery attendance: implications for HIV intervention among adolescent and young adult injection drug users. *J Acquir Immune Defic Syndr* 2003 Jan 1;32(1):86-93.

Fuller CM, Vlahov D, Latkin CA, Ompad DC, Celentano DD, Strathdee SA. Social circumstances of initiation of injection drug use and early shooting gallery attendance:

implications for HIV intervention among adolescent and young adult injection drug users. *J Acquir Immune Defic Syndr* 2003 Jan 1;32(1):86-93.

Gilchrist G, Cameron J, Scoular J. Crack and cocaine use among female prostitutes in Glasgow: Risky business. *Drugs: Education, Prevention & Policy* 2005 Oct;12(5):381-391.

Guindalini C, Vallada H, Breen G, Laranjeira R. Concurrent crack and powder cocaine users from Sao Paulo: do they represent a different group? *BMC Public Health* 2006 Jan 20;6:10.

Gyarmathy VA, Neaigus A, Miller M, Friedman SR, Des Jarlais DC. Risk correlates of prevalent HIV, hepatitis B virus, and hepatitis C virus infections among noninjecting heroin users. *J Acquir Immune Defic Syndr* 2002 Aug 1;30(4):448-456

Hagan H, Thiede H, Des Jarlais DC. HIV/hepatitis C virus co-infection in drug users: risk behavior and prevention. *AIDS* 2005 Oct;19(Suppl 3):S199-207.

Hansen H, Alegria M, Caban CA, Pena M, Lai S, Shrout P. Drug Treatment, Health, and Social Service Utilization by Substance Abusing Women From a Community-Based Sample. *Med Care* 2004 Nov;42(11):1117-1124.

Haydon E, Fischer B. Crack use as a public health problem in Canada: call for an evaluation of 'safer crack use kits'. *Canadian Journal of Public Health. Revue Canadienne de Sante Publique* 2005;96(3):185-188.

Heffernan R, Chiasson MA, Sackoff JE. HIV risk behaviors among adolescents at a sexually transmitted disease clinic in New York City. *Journal of Adolescent Health* 1996 Jun;18(6):429-434.

Hermida M, Ferreira MC, Barral S, Laredo R, Castro A, Diz Dios P. Detection of HCV RNA in saliva of patients with hepatitis C virus infection by using a highly sensitive test. *J Virol Methods* 2002 Mar;101(1-2):29-35.

Hoffman JA, Klein H, Eber M, Crosby H. Frequency and intensity of crack use as predictors of women's involvement in HIV-related sexual risk behaviors. *Drug Alcohol Depend* 2000 Mar 1;58(3):227-236.

Howe CJ, Fuller CM, Ompad DC, Galea S, Koblin B, Thomas D, et al. Association of sex, hygiene and drug equipment sharing with hepatitis C virus infection among non-injecting drug users in New York City. *Drug & Alcohol Dependence* 2005 Sep 1;79(3):389-395.

Hudgins R, McCusker J, Stoddard A. Cocaine use and risky injection and sexual behaviors. *Drug Alcohol Depend* 1995 Jan;37(1):7-14.

Hwang LY, Ross MW, Zack C, Bull L, Rickman K, Holleman M. Prevalence of sexually transmitted infections and associated risk factors among populations of drug abusers. *Clinical Infectious Diseases* 2000 Oct;31(4):920-926.

Inciardi JA, Chitwood DD, McCoy CB. Special risks for the acquisition and transmission of HIV infection during sex in crack houses. *J Acquir Immune Defic Syndr* 1992;5(9):951-952.

Inciardi JA, Surratt HL, Pechansky F, Kessler F, von Diemen L, da Silva EM, et al. Changing patterns of cocaine use and hiv risks in the south of Brazil. *J Psychoactive Drugs* 2006 Sep;38(3):305-310.

Inciardi JA. Crack, crack house sex, and HIV risk. *Arch Sex Behav* 1995 Jun;24(3):249-269.

Irwin KL, Edlin BR, Faruque S, McCoy HV, Word C, Serrano Y, et al. Crack cocaine smokers who turn to drug injection: characteristics, factors associated with injection, and implications for HIV transmission. The Multicenter Crack Cocaine and HIV Infection Study Team. *Drug Alcohol Depend* 1996 Oct;42(2):85-92.

Jacobs BA, Miller J. Crack dealing, gender, and arrest avoidance. *Soc Probl* 1998 Nov;45(4):550-569.

Jauffret-Roustide M, Le Strat Y, Couturier E, Thierry D, Rondy M, Quaglia M, et al. A national cross-sectional study among drug-users in France: Epidemiology of HCV and highlight on practical and statistical aspects of the design. .

Kalichman SC, Graham J, Luke W, Austin J. Perceptions of health care among persons living with HIV/AIDS who are not receiving antiretroviral medications. *AIDS Patient Care STDS* 2002 May;16(5):233-240.

Kalichman SC, Rompa D, Cage M. Sexually transmitted infections among HIV seropositive men and women. *Sex Transm Infect* 2000 Oct;76(5):350-354.

Kerr T, Tyndall M, Li K, Montaner J, Wood E. Safer injection facility use and syringe sharing in injection drug users. *Lancet* 2005 Jul 23-29;366(9482):316-318.

Kimber J, Dolan K, van Beek I, Hedrich D, Zurhold H. Drug consumption facilities: an update since 2000. *Drug Alcohol Rev* 2003 Jun;22(2):227-233.

Leonard L, DeRubeis E, Pelude L, Medd E, Birkett N, Seto J. "I inject less as I have easier access to pipes" Injecting, and sharing of crack-smoking materials, decline as safer crack-smoking resources are distributed. *International Journal of Drug Policy* 2008 Jun;19(3):255-264.

Logan TK, Leukefeld C, Farabee D. Sexual and drug use behaviors among women crack users: implications for prevention. *AIDS Education & Prevention* 1998 Aug;10(4):327-340.

Logan TK, Leukefeld C. Sexual and drug use behaviors among female crack users: a multi-site sample. *Drug & Alcohol Dependence* 2000 Mar 1;58(3):237-245.

Macias J, Palacios RB, Claro E, Vargas J, Vergara S, Mira JA, et al. High prevalence of hepatitis C virus infection among noninjecting drug users: association with sharing the inhalation implements of crack. *Liver International* 2008 Jul;28(6):781-786.

MacMaster SA. Experiences with, and Perceptions of, Barriers to Substance Abuse and HIV Services Among African American Women Who Use Crack Cocaine. *Journal of Ethnicity in Substance Abuse* 2005;4(1):53-75.

Malchy L, Bungay V, Johnson J. Documenting practices and perceptions of 'safer' crack use: A Canadian pilot study. *International Journal of Drug Policy* 2008 Aug;19(4):339-341.

McCoy CB, Lai S, Metsch LR, Messiah SE, Zhao W. Injection drug use and crack cocaine smoking: independent and dual risk behaviors for HIV infection. *Ann Epidemiol* 2004 Sep;14(8):535-542.

McCoy H, Inciardi J, Metsch L, Pottieger A, Saum C. Women, Crack, and Crime: Gender Comparisons of Criminal Activity Among Crack Cocaine Users. *Contemporary Drug Problems* 1995;22(3):435-451.

McMahon JM, Tortu S. A potential hidden source of hepatitis C infection among noninjecting drug users. *J Psychoactive Drugs* 2003 Oct-Dec;35(4):455-460.

Metsch LR, Bell C, Pereyra M, Cardenas G, Sullivan T, Rodriguez A, et al. Hospitalized HIV-infected patients in the era of highly active antiretroviral therapy. *Am J Public Health* 2009 01 Jun;99(6):1045-1049.

Metsch LR, McCoy HV, McCoy CB, Miles CC, Edlin BR, Pereyra M. Use of health care services by women who use crack cocaine. *Women Health* 1999;30(1):35-51.

Metsch LR, Pereyra M, Messinger S, Del Rio C, Strathdee SA, Anderson-Mahoney P, et al. HIV transmission risk behaviors among HIV-infected persons who are successfully linked to care. *Clinical Infectious Diseases* 2008 15 Aug;47(4):577-584.

Millson P, Myers T, Calzavara L, Wallace E, Major C, Degani N. Regional variation in HIV prevalence and risk behaviours in Ontario injection drug users (IDU). *Canadian Journal of Public Health. Revue Canadienne de Sante Publique* 2003;94(6):431-435.

Mitchell-Lewis DA, Phelan JA, Kelly RB, Bradley JJ, Lamster IB. Identifying oral lesions associated with crack cocaine use. *J Am Dent Assoc* 1994 Aug;125(8):1104-8, 1110.

Neaigus A, Gyarmathy VA, Zhao M, Miller M, Friedman SR, Des Jarlais DC. Sexual and other noninjection risks for HBV and HCV seroconversions among noninjecting heroin users. *J Infect Dis* 2007 Apr 1;195(7):1052-1061.

Nunes CLX, Andrade T, Galvao-Castro B, Bastos FI, Reingold A. Assessing risk behaviors and prevalence of sexually transmitted and blood-borne infections among female crack cocaine users in Salvador - Bahia, Brazil. *Brazilian Journal of Infectious Diseases* 2007 Dec;11(6):561-566.

Nyamathi AM, Dixon EL, Robbins W, Smith C, Wiley D, Leake B, et al. Risk factors for hepatitis C virus infection among homeless adults. *J Gen Intern Med* 2002 Feb;17(2):134-143.

Nyamathi AM, Stein JA, Swanson JM. Personal, cognitive, behavioral, and demographic predictors of HIV testing and STDs in homeless women. *J Behav Med* 2000 Apr;23(2):123-147.

- Okpaku S, MacMaster SA, Dennie S, Tolliver D. A model program for increasing treatment access for African American women who use crack cocaine and are at risk of contracting HIV. *J Hum Behav Soc Environ* 2008;17(3-4):293-307.
- Osher FC, Goldberg RW, McNary SW, Swartz MS, Essock SM, Butterfield MI, et al. Substance abuse and the transmission of hepatitis C among persons with severe mental illness. *Psychiatric Services* 2003 Jun;54(6):842-847.
- Ouellet LJ, Thorpe LE, Huo D, Bailey SL, Jimenez AD, Johnson WA, et al. Prevalence and incidence of HIV among out-of-treatment injecting drug users, Chicago 1994-1996. *Journal of Acquired Immune Deficiency Syndromes: JAIDS* 2000 Dec 15;25(5):443-450.
- Paz-Bailey G, Teran S, Levine W, Markowitz LE. Syphilis outbreak among Hispanic immigrants in Decatur, Alabama: association with commercial sex. *Sex Transm Dis* 2004 Jan;31(1):20-25.
- Perlman DC, Henman AR, Kochems L, Paone D, Salomon N, Des Jarlais DC. Doing a shotgun: a drug use practice and its relationship to sexual behaviors and infection risk. *Soc Sci Med* 1999 May;48(10):1441-1448.
- Porter J, Bonilla L, Drucker E. Methods of smoking crack as a potential risk factor for HIV infection: crack smokers' perceptions and behavior. *Contemporary Drug Problems* 1997;24(2):319-347.
- Porter J, Bonilla L. Crack users' cracked lips: an additional HIV risk factor. *Am J Public Health* 1993 Oct;83(10):1490-1491.
- Prinzleve M, Haasen C, Zurhold H, Matali JL, Bruguera E, Gerevich J, et al. Cocaine use in Europe - a multi-centre study: patterns of use in different groups. *Eur Addict Res* 2004;10(4):147-155.
- Pyett PM, Warr DJ. Vulnerability on the streets: female sex workers and HIV risk. *AIDS Care* 1997 Oct;9(5):539-547.
- Rachlis BS, Wood E, Zhang R, Montaner JS, Kerr T. High rates of homelessness among a cohort of street-involved youth. *Health Place* 2009 Mar;15(1):10-17.
- Reid SD. Poor educational attainment and sexually transmitted infections associated with positive HIV serostatus among female in-patient substance abusers in Trinidad and Tobago. *Drug Alcohol Depend* 2006 Apr;82(SUPPL. 1):S81-S84.
- Rhodes T, Kimber J, Small W, Fitzgerald J, Kerr T, Hickman M, et al. Public injecting and the need for 'safer environment interventions' in the reduction of drug-related harm. *Addiction* 2006 Oct;101(10):1384-1393.
- Risser JM, Padgett P, Wolverton M, Risser WL. Relationship between heterosexual anal sex, injection drug use and HIV infection among black men and women. *Int J STD AIDS* 2009 May;20(5):310-314.
- Rowan-Szal G, Joe G, Simpson D. Treatment retention of crack and cocaine users in a national sample of long term residential clients. *Addiction Research* 2000;8:7-14.

- Royse D, Leukefeld C, Logan TK, Dennis M, Wechsberg W, Hoffman J, et al. Homelessness and gender in out-of-treatment drug users. *American Journal of Drug & Alcohol Abuse* 2000 May;26(2):283-296.
- Scheinmann R, Hagan H, Lelutiu-Weinberger C, Stern R, Des Jarlais DC, Flom PL, et al. Non-injection drug use and Hepatitis C Virus: a systematic review. *Drug Alcohol Depend* 2007 Jun 15;89(1):1-12.
- Schlosser AV, Abdallah AB, Callahan CL, Bradford S, Cottler LB. Does readiness to change predict reduced crack use in human immunodeficiency virus prevention? *J Subst Abuse Treat* 2008 Jul;35(1):28-35.
- Sena AC, Muth SQ, Heffelfinger JD, O'Dowd JO, Foust E, Leone P. Factors and the sociosexual network associated with a syphilis outbreak in rural North Carolina. *Sex Transm Dis* 2007 May;34(5):280-287.
- Shannon K, Bright V, Duddy J, Tyndall MW. Access and utilization of HIV treatment and services among women sex workers in Vancouver's Downtown Eastside. *Journal of Urban Health* 2005 Sep;82(3):488-497.
- Shannon K, Bright V, Gibson K, Tyndall MW, Maka Project P. Sexual and drug-related vulnerabilities for HIV infection among women engaged in survival sex work in Vancouver, Canada. *Canadian Journal of Public Health. Revue Canadienne de Sante Publique* 2007;98(6):465-469.
- Shannon K, Ishida T, Lai C, Tyndall MW. The impact of unregulated single room occupancy hotels on the health status of illicit drug users in Vancouver. *International Journal of Drug Policy* 2006 Mar;17(2):107-114.
- Shannon K, Ishida T, Morgan R, Bear A, Oleson M, Kerr T, et al. Potential community and public health impacts of medically supervised safer smoking facilities for crack cocaine users. .
- Shannon K, Kerr T, Bright V, Gibson K, Tyndall MW. Drug sharing with clients as a risk marker for increased violence and sexual and drug-related harms among survival sex workers. *AIDS Care* 2008 Feb;20(2):235-241.
- Sharpe TT, Lee LM, Nakashima AK, Elam-Evans LD, Fleming PL. Crack cocaine use and adherence to antiretroviral treatment among HIV-infected black women. *J Community Health* 2004 Apr;29(2):117-127.
- Sherman SG, Latkin CA. Drug users' involvement in the drug economy: implications for harm reduction and HIV prevention programs. *J Urban Health* 2002 Jun;79(2):266-277.
- Siegal HA, Falck RS, Wang J, Carlson RG. History of sexually transmitted diseases infection, drug-sex behaviors, and the use of
- Singer M, Dai H, Weeks MR, Malave D. AIDS risk perception among women drug users in Hartford, CT. *Women Health* 1998;27(1-2):67-85.
- Smereck GAD, Hockman EM. Prevalence of HIV infection and HIV risk behaviors associated with living place: On-the-street homeless drug users as a special target

population for public health intervention. *Am J Drug Alcohol Abuse* 1998 May;24(2):299-319.

Sterk CE, Elifson KW, Theall KP. Individual action and community context: the Health Intervention Project. *Am J Prev Med* 2007 Jun;32(6 Suppl):S177-81.

Stoeever H. Consumption Rooms--A Middle Ground Between Health and Public Order Concerns. *Journal of Drug Issues* 2002;32(2):597-606.

Strenski TA, Marshall PA, Gacki JK, Sanchez CW. The emergent impact of syringe exchange programs on shooting galleries and injection behaviors in three ethnically diverse Chicago neighborhoods. *Med Anthropol* 2000;18(4):415-438.

Surratt HL, Inciardi JA. HIV risk, seropositivity and predictors of infection among homeless and non-homeless women sex workers in Miami, Florida, USA. *AIDS Care* 2004 Jul;16(5):594-604.

Theall KP, Sterk CE, Elifson KW, Kidder D. Factors associated with positive HIV serostatus among women who use drugs: continued evidence for expanding factors of influence. *Public Health Rep* 2003 Sep-Oct;118(5):415-424.

Tinsman PD, Bullman S, Chen X, Burgdorf K, Herrell JM. Factors affecting client response to HIV outreach efforts. *J Subst Abuse* 2001;13(1-2):201-214.

Tortu S, Beardsley M, Deren S, Williams M, McCoy HV, Stark M, et al. HIV infection and patterns of risk among women drug injectors and crack users in low and high seroprevalence sites. *AIDS Care* 2000 Feb;12(1):65-76.

Tortu S, Goldstein M, Deren S, Beardsley M, Hamid R, Ziek K. Urban crack users: gender differences in drug abuse, HIV risk and health status... co-published simultaneously in *Women, Drug Use, and HIV Infection* (ed: Sally J. Stevens, Stephanie Tortu, and Susan L. Coyle) The Haworth Medical Press, an imprint of The Haworth Press, Inc., 1998. pp 177-89. *Women Health* 1998;27(1):177-189.

Tortu S, McMahon JM, Pouget ER, Hamid R. Sharing of noninjection drug-use implements as a risk factor for hepatitis C. *Subst Use Misuse* 2004 Jan;39(2):211-224.

Tortu S, Neaigus A, McMahon J, Hagen D. Hepatitis C among noninjecting drug users: a report. *Subst Use Misuse* 2001 Mar;36(4):523-534.

Van der Poel A, Barendregt C, van de Mheen D. Drug consumption rooms in rotterdam: an explorative description. *Eur Addict Res* 2003 Apr;9(2):94-100.

Verthein U, Haasen C, Prinzleve M, Degkwitz P, Krausz M. Cocaine use and the utilisation of drug help services by consumers of the open drug scene in Hamburg. *Eur Addict Res* 2001 Dec;7(4):176-183.

Vivancos R, Maskrey V, Rumball D, Harvey I, Holland R. Crack/cocaine use in a rural county of England. *Journal of Public Health* 2006 Jun;28(2):96-103.

Vlahov D, Fuller CM, Ompad DC, Galea S, Des Jarlais DC. Updating the infection risk reduction hierarchy: preventing transition into injection. *J Urban Health* 2004 Mar;81(1):14-19.

Weatherby NL, McCoy HV, Metsch LR, Bletzer KV, McCoy CB, de la Rosa MR. Crack cocaine use in rural migrant populations: living arrangements and social support. *Subst Use Misuse* 1999 Mar-Apr;34(4-5):685-706.

Wechsberg WM, Lam WK, Zule W, Hall G, Middlesteadt R, Edwards J. Violence, homelessness, and HIV risk among crack-using African-American women. *Subst Use Misuse* 2003 Feb-May;38(3-6):669-700.

Wechsberg WM, Lam WKK, Zule WA, Bobashev G. Efficacy of a Woman-Focused Intervention to Reduce HIV Risk and Increase Self-Sufficiency Among African American Crack Abusers. *Am J Public Health* 2004 Jul;94(7):1165-1173.

Wechsberg WM, Zule WA, Riehman KS, Luseno WK, Lam WK. African-American crack abusers and drug treatment initiation: barriers and effects of a pretreatment intervention. *Substance Abuse Treatment, Prevention, & Policy* 2007;2:10.

Weeks MR, Li J, Dickson-Gomez J, Convey M, Martinez M, Radda K, et al. Outcomes of a peer HIV prevention program with injection drug and crack users: The risk avoidance partnership. *Subst Use Misuse* 2009;44(2):253-281.

Wight RG, LeBlanc AJ, Aneshensel CS. Support service use by persons with AIDS and their caregivers. *AIDS Care* 1995;7(4):509-520.

Wilson T, DeHovitz JA. STDs, HIV, and crack cocaine: a review. *AIDS Patient Care STDs* 1997 Apr;11(2):62-66.

Wood E, Kerr T, Small W, Li K, Marsh DC, Montaner JS, et al. Changes in public order after the opening of a medically supervised safer injecting facility for illicit injection drug users. *CMAJ* 2004 Sep 28;171(7):731-734.

Wood E, Spittal PM, Small W, Kerr T, Li K, Hogg RS, et al. Displacement of Canada's largest public illicit drug market in response to a police crackdown. *CMAJ* 2004 May 11;170(10):1551-1556.

Word CO, Bowser B. Background to crack cocaine addiction and HIV high-risk behavior: The next epidemic. *Am J Drug Alcohol Abuse* 1997 Feb;23(1):67-77.

APPENDIX D

Thematic Guide for Qualitative Participant Interviews

Thematic Guide for Qualitative Participant Interviews

The following interview guide serves to identify the themes which will be the focus of participant interviews.

ACCESS TO HEALTH SERVICES

Let's start by talking about your health. How's your health?

When you are not feeling so good, do you know where to go to get help for yourself?

From a doctor? Outreach worker? Peer?

How's your health been over the last six months?

Where did you go to get help?

How did that work out for you?

Probe for barriers to accessing the services you needed?

How easy was it for you to get the care you needed?

Are there certain services or programs that are particularly difficult for you to access?

What about drug treatment access? Is there an opportunity for you to receive drug detox treatment if you wanted it?

How about your drug use – does that get in the way

What about sexual health services in Ottawa? What's your experience been like?

Do you feel that there are barriers to you accessing any of these services?

DRUG USE BEHAVIOURS

Now let's talk about your personal drug use behaviours.

Let's talk about your experience with smoking crack.

Probes: Have you smoked crack cocaine in the past six months? In the past one month?

Probes What about where you smoke crack the most?

Do you smoke crack alone or with others? Do you have someone around you when you smoke in case you become sick or have a bad hit?

CRACK-SPECIFIC HARM REDUCTION

Let's talk now about programs and services specifically for people who smoke crack.

Have you collected crack use supplies from an agency in Ottawa?

How was that?

Safer inhalation supplies, drug treatment referrals, primary care for burns/blisters, health education/information about the possible risks of using crack

As someone of your age and gender, (As a young woman – as appropriate) do you find that you can relate to the harm reduction messages and programming in Ottawa?

Different health messages, specific outreach programs, disease prevention messages.

In your opinion, are people who smoke crack different from people who inject drugs? Do you feel that their health services needs are different?

Have you heard of Insite in Vancouver?

Insite is a health facility which provides a safe place for men and women to use drugs. It is supervised by public health nurses and also provides individuals with clean injection and drug preparation equipment.

If there was a place like that in Ottawa that was for individuals who smoke crack, do you think this is something that you would use?

If so, why?

What would it look like - services, hours, location?

Probe: There are many arguments among people living in Ottawa as to why a safer consumption site would not be good for the city of Ottawa or for people who live in the community. As someone who might access this facility, how do you think its presence would improve the community and the lives of people living in the area?

Is there anything else related to your drug use or access to health services that we did not discuss that you would like to bring up now?

APPENDIX E

Consent Form for Participant Interviews



CONSENT FORM

Looking into the Eyes of Canada's Crack Epidemic:

Critically appraising Canada's approach to harm reduction and responding with a needs assessment conducted with women and men who smoke crack

BACKGROUND OF THE STUDY

This interview is part of a research study being undertaken by a group of researchers from the University of Ottawa for a Masters thesis research project.

The purpose of the research study is to gather information about the types of support, services and information women and men in Ottawa who smoke crack need to reduce the number of crack smokers in Ottawa who are becoming infected with HIV, the virus linked to AIDS, as well as the hepatitis C virus. We also want to know of any difficulties crack smokers in Ottawa may have had in accessing HIV and hepatitis C prevention health services and in avoiding behaviours and practices associated with acquiring HIV and hepatitis C infection.

The data collected will help provide information for agencies which deliver these services and will help them to develop informed programs and new policies in the future.

Also, information from this study will be passed on to policy makers and programme planners to help develop effective HIV and hepatitis C prevention programmes for women and men who smoke crack.

You do not need to identify yourself for the purpose of this research.

STUDY PROCEDURES

If you agree to participate in this research, you will be asked questions about your drug use, your drug use behaviours and your experiences with different community and health services in Ottawa. Participation in the interview will involve approximately one hour of your time. The interview will be conducted in-person and will be audio-recorded. You can choose not to answer any questions, you can choose to stop the tape

recorder at any time and you can stop the interview at any time. Whether you choose to take part or not will not affect your right to services at any agency.

All collected data will be treated confidentially and your name will not appear anywhere.

We very much appreciate your honest contribution to this research project. If you agree to take part in this interview, you will receive \$50 for participating for your time and effort spent on the survey.

If you have any questions or concerns about your participation in this interview, please ask them now or at any time during the interview.

You can also contact one of the people overseeing the study at the University of Ottawa. Her name is Lynne Leonard. You can call Lynne at 613-562-5800 extension 8286 for any reason that has to do with you taking part in the study.

If you have any concerns related to your rights as a research subject you may contact the Chairperson of the Ottawa Hospital Research Ethics Board at 613-798-5555 ext. 14902. This office has no link with the researchers running the study.

Do you have any questions before we start?

Do you understand what your participation in this evaluation involves?

CONSENT

If you agree to participate in the interview it means that you agree to answer the questions asked honestly and to the best of your ability.

DO YOU AGREE TO PARTICIPATE? ☐ Yes ☐ No

Informed consent obtained by (INTERVIEWER):

Print name in capitals

Signature

Date:_____

APPENDIX F

Demographics Form for Participant Interviews

Demographics Questionnaire for In-depth Participant Interviews

Date: _____

Time: _____

Location: _____

Interview Number: _____

Please answer the following questions to the best of your ability. If you do not wish to answer any of the questions, you may leave them blank.

1. What is your year of birth? _____
2. Are you a
 - ↑ Man
 - ↑ Woman
 - ↑ Transgender
 - ↑ Other: _____
3. How would you describe your race or ethnicity?
 - ↑ White (Caucasian)
 - ↑ Black
 - ↑ Aboriginal → Please specify: _____
 - ↑ Asian
 - ↑ Other: _____
4. What is your first language?
 - ↑ English
 - ↑ French
 - ↑ Spanish
 - ↑ Aboriginal → Please specify: _____
 - ↑ Other: _____
5. Do you currently live in Ottawa?
 - ↑ Yes → If yes, go to question 6.
 - ↑ No
 - ↑ Don't know

6. What area of Ottawa do you currently live or stay? _____
7. In the last six months, have you lived in any of the following places?
(check all that apply)
- ↑ Own or partner's house/apartment
 - ↑ Family member/friend's house/apartment
 - ↑ No fixed address (couch surfing)
 - ↑ On the street (abandoned house, care, park)
 - ↑ Shelter
 - ↑ Hotel/motel room
 - ↑ Crack house/shooting gallery
 - ↑ Rooming or boarding house
 - ↑ Recovery house/treatment centre/rehab
 - ↑ Jail/prison/detention centre
 - ↑ Other: _____
8. What is the highest level of education that you have completed?
- ↑ Junior high school
 - ↑ Some high school
 - ↑ Completed high school
 - ↑ Any university/college/trade school
 - ↑ Other: _____
9. In the last year, what was your total income?
- | | |
|-------------------|---------------------|
| ↑ Under 10,000 | ↑ 50,001 – 70,000 |
| ↑ 10,001 – 30,000 | ↑ 70,001 – 100,000 |
| ↑ 30,001 – 50,000 | ↑ More than 100,000 |
10. Over the last year, how did you get money to live on? (check all that apply)
- ↑ Regular work (full, part-time or contract)
 - ↑ Occasional work (seasonal, odd jobs)
 - ↑ Welfare
 - ↑ Disability
 - ↑ Panhandling
 - ↑ EI (Unemployment)
 - ↑ Sex work
 - ↑ Dealing or doing drug runs
 - ↑ Illegal activities
 - ☐ Other: _____

APPENDIX G

Letter of Ethical Approval from The Ottawa Hospital Research Ethics Board



Ottawa Hospital Research Ethics Boards / Conseils d'éthique en recherches

October 15, 2010

Ms. Kate Smith

Dear Ms. Smith:

Re: Protocol # 2010685-01H Looking into the Eyes of Canada's Crack Epidemic: Critically Appraising Canada's Approach to Harm Reduction and Responding with a Needs Assessment Conducted with Women and Men Who Smoke Crack

Protocol approval valid until - October 14, 2011

Thank you for your e-mail dated October 14, 2010. I am pleased to inform you that this protocol and English verbal consent form (version 2) dated October 1, 2010 underwent expedited review by the Ottawa Hospital Research Ethics Board (OHREB) and is approved. No changes, amendments or addenda may be made to the protocol or the verbal consent form without the OHREB's review and approval.

The validation date should be indicated on the bottom of all consent forms and information sheets (see copy attached). If the study is to continue beyond the expiry date noted above, a Renewal Form should be submitted to the OHREB approximately six weeks prior to the current expiry date. If the study has been completed by this date, a Termination Report should be submitted.

The Ottawa Hospital Research Ethics Board is constituted in accordance with, and operates in compliance with the requirements of the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans; Health Canada Good Clinical Practice Consolidated Guideline; Part C Division 5 of the Food and Drug Regulations of Health Canada; and the provisions of the Ontario Health Information Protection Act 2004 and its applicable Regulations.

Yours sincerely,

Raphael Saymour, M.D.
Chairman
Ottawa Hospital Research Ethics Board

End

lcb