

Assessing the Need for Prison-Based Needle Exchange Programs in Canada: A Situational Analysis

Gerald Thomas

Canadian Centre on Substance Abuse

December 2005

Table of Contents

Introduction	1
Methods	1
Background	2
International Experiences with Prison-Based Needle Exchange Programs	9
Rationales and Previous Calls for Pilot Prison-Based Needle Exchange Projects in Canada	11
Possible Courses of Action	13
Conclusion	13
Bibliography	14

Abstract

The overall goal of this background paper is to present a situational analysis of current trends in prison drug use, the prevalence of HIV/AIDS and HCV in prisoner populations and other information relevant to assessing the need for prison-based needle exchange programs in Canada. The first part presents background information on (1) the role of injection drug use (IDU) in the HIV and HCV epidemics, (2) prevalence of substance users and levels of substance use in Canadian prisons, (3) levels and patterns of injection drug use and needle sharing in Canadian prisons, (4) the prevalence of HIV and hepatitis C infections among Canadian prisoners, (5) evidence of cases of disease transfer from sharing needles in prisons, and (6) existing harm reduction policies and programs in provincial and federal correctional systems in Canada. The next section reviews international experience with prison-based needle exchange programs, emphasizing evaluations of their effects on behaviour and their effectiveness in reducing harms among prisoners who use drugs by injection. The third part provides a review of the legal/constitutional and moral/ethical rationales for providing sterile needles to prisoners and a brief summary of the previous calls for piloting prison-based needle exchange programs in Canada. The last part discusses several possible courses of action available to the Canadian government as it considers its options on prison-based needle exchange programs.

This document was published by the Canadian Centre on Substance Abuse (CCSA)
75 Albert St., Suite 300, Ottawa, ON K1P 5E7, tel.: 613 235-4048,
e-mail: info@ccsa.ca, website: www.ccsa.ca

Suggested citation: Thomas, Gerald. (2005). Assessing the need for prison-based needle exchange in Canada: A situational analysis. Ottawa, ON: Canadian Centre on Substance Abuse. (National Policy Working Group Policy Discussion Document)

The purpose of CCSA's National Policy Working Group (NPWG) is to provide a forum or focus for agencies, or individuals with an expertise in substance abuse to participate in a broad discussion and analyze policy issues and topics from a national perspective. The NPWG is not an advocacy group, but provides a "best practice" analysis and positions for consideration by the CCSA Board and the broader addictions community. The NPWG contributes to CCSA's goal of policy formulation by monitoring significant research and policy developments and providing informed comment on issues of national significance. Current membership of the NPWG includes: John Borody, Addictions Foundation of Manitoba; Thomas Brown, McGill University; Garth McIver, Canadian Society of Addiction Medicine; Louis Gliksmann, Centre for Addiction and Mental Health; Perry Kendall, Provincial Health Officer, British Columbia; Christiane Poulin, Dalhousie University; Linda Dabros, Health Canada; Edward Sawka, Alberta Alcohol and Drug Abuse Commission; Patricia Begin, Canadian Centre on Substance Abuse; Sally Greenhill, Alberta Alcohol and Drug Abuse Commission; and Gerald Thomas, Canadian Centre on Substance Abuse.

This document can also be downloaded as a PDF at www.ccsa.ca

Ce document est également disponible en français sous le titre *Évaluer le besoin de programmes d'échange de seringues dans les prisons au Canada : analyse de situation*.

This document was made possible in part through a financial contribution from Health Canada. The views expressed herein do not necessarily reflect the views of Health Canada.

Copyright © 2006 Canadian Centre on Substance Abuse (CCSA). All rights reserved.

ISBN 1-897321-03-1

Assessing the Need for Prison-Based Needle Exchange Programs in Canada: A Situational Analysis

Gerald Thomas, Canadian Centre on Substance Abuse, December 2005

Introduction

It has become increasingly evident that simplistic “just say no” and one-sided “get tough” enforcement approaches are not providing adequate responses to either the complex causes or the sizeable negative health and social consequences of substance misuse and addictions.¹ As a result, more sophisticated and comprehensive responses have emerged that emphasize the use of prevention, treatment and harm reduction along with more traditional enforcement approaches (MacPherson, 2001). For example, Correctional Service Canada (CSC), which houses all prisoners serving sentences over two years, uses a continuum of responses to assist substance-abusing prisoners where an evidence-based treatment regime operates along side prevention and education programming, advanced drug detection and security measures, and harm reduction programs such as providing bleach for sterilizing needles used to inject drugs (Lines, 2002). This paper provides a discussion of issues related to one form of harm reduction, needle exchange programs, in prisons in Canada.

The overall goal of this background paper is to present a situational analysis of current trends in prison drug use, the prevalence of HIV/AIDS and hepatitis C in prisoner populations, and other information relevant to assessing the need for prison-based needle exchanges in Canadian prisons. The first part presents background information on (1) the role of injection drug use (IDU) in the HIV/AIDS and HCV epidemics, (2) prevalence of substance users and levels of substance use in Canadian prisons, (3) levels and patterns of injection drug use and needle sharing in Canadian prisons, (4) the prevalence of HIV and hepatitis C infections among Canadian prisoners, (5) evidence of cases of disease transfer from sharing needles in prisons, and (6) existing harm reduction policies and programs in provincial and federal correctional systems in Canada. The next section reviews the international experience with prison-based needle exchange programs emphasizing evaluations of their effects on behaviour and their effectiveness for reducing harms among prisoners who use drugs by injection. The third part provides a review of the legal/constitutional and moral/ethical rationales for providing sterile needles to prisoners and a brief summary of the previous calls for piloting prison-based needle exchange programs in Canada. The last part discusses several possible courses of action that the Government of Canada could take as it considers its options regarding prison-based needle exchange programs.

Methods

The research presented in this paper is based on a review of the peer-reviewed and grey literatures (in English) on topics directly related to assessing the need for implementing prison-based needle exchanges with a focus on Canada. Information from other countries was included when data for Canada were not available, or to develop comparisons with Canada. Specific topics covered include incidence and prevalence of HCV and HIV/AIDS in both the general population and the prisoner population in Canada, levels of drug use and prevalence of associated risk behaviours among prisoners in Canada, evidence of disease transfer among drug-using prisoners in Canada and internationally, existing harm reduction programs and policies in Canadian correctional jurisdictions, outcomes associated with previous prison needle exchanges programs outside of Canada, and a review of previous calls for pilot prison needle exchange programs. This review consisted of key word searches of the World Wide Web (online sources) and library databases (including comprehensive worldwide databases such as WorldCat, MEDLINE and SCIENCEDIRECT).

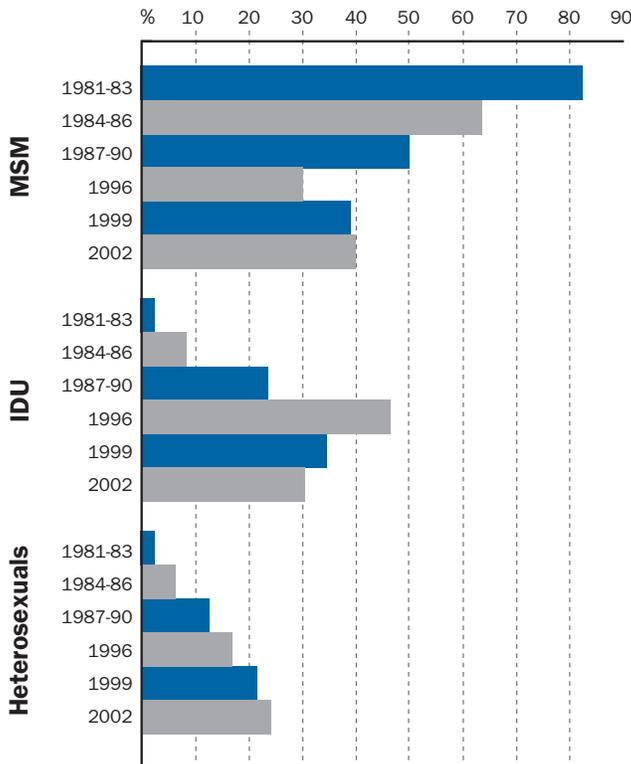
¹ For the most recent data on substance use levels and patterns in Canada, including prevalence data for injection drug use, see the detailed report from the 2004 Canadian Addiction Survey (CAS) available at www.ccsa.ca

Background

The Role of Injection Drug Use in the HIV and HCV Epidemics. Research confirms that injection drug use, and especially the sharing of non-sterile injection equipment, are major risk factors for the spread of blood-borne infectious diseases such as HIV and hepatitis C (HCV). An estimated 30% of all new case of HIV (PHAC, 2003) and 57–63% of all new cases of HCV in Canada (PHAC, 2004a; PHAC, 2001:2) are attributable to injection drug use.

Figure 1 shows the percentage of new confirmed cases of HIV in Canada from 1981 to 2002 attributed to three exposure categories: men who have sex with men (MSM), intravenous drug use (IDU) and heterosexual sexual relations (Heterosexual).

Figure 1: Estimated Distribution of New HIV Cases in Canada, by Exposure Category, 1981-2002

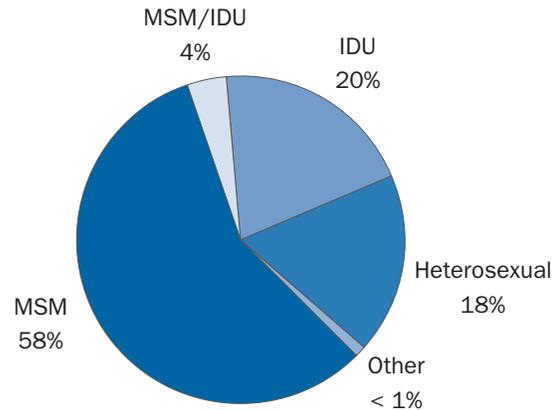


Source. PHAC, 2003:202.

From Figure 1 it is evident that the percentage of new confirmed cases of HIV attributable to injection drug use in Canada grew from 2% in 1981–83 to peak at 48% in 1996. Since 1996 the proportion attributable to injection drug use has fallen to approximately 30%. This provides at least circumstantial validation for harm reduction programs such as community-based needle exchange programs, which began operating officially in Canada in 1989 and spread to most major urban centres in the early 1990s, and methadone maintenance therapy, which became more common in Canada in the mid-1990s, for limiting the spread of HIV among people who use drugs by injection.²

Figure 2 shows the overall prevalence of confirmed HIV infections across five exposure categories in Canada for 2002.

Figure 2: Prevalence of Confirmed HIV Infections in Canada, by Exposure Category, 2002



Source. PHAC, 2003:201.

Figure 2 shows that people who use drugs by injection (IDUs), including IDUs who have sex with men, account for nearly one in four confirmed cases of HIV in Canada and represent the second highest prevalence rate after men who have sex with men (MSM). Thus, in terms of both incidence (new cases) and prevalence (existing cases), injection drug use accounts for a large proportion of HIV cases in Canada.³

² For more direct evidence of the efficacy of community-based needle exchange programs in reducing the spread of blood-borne diseases among injection drug users see WHO, 2004; Holtgrave et al., 1998; 1997; Lurie et al., 1993; US GAO, 1993.

³ People who use drugs by injection also account for a large proportion of new and existing cases of hepatitis C (HCV) in Canada. Early in the HCV pandemic, Scully et al. (1993) documented that 43% of 63 consecutive cases of HCV infection seen in a private practice in Ottawa were among injection drug users. Similarly, among the 54 official cases of HCV reported in PEI from 1991 to 1995, 46% were attributed to IDU (Stratton et al., 1997).

Available studies suggest that injection drug use is the single most important risk factor in the transmission of HCV in Canada, accounting for approximately 60-70% of the estimated 2,200-4,000 new cases a year (PHAC, 2001; LCDC, 1999). Currently, there are an estimated 250,000 to 300,000 people with HCV in Canada and approximately two-thirds of these are unaware that they are infected (PHAC, 2004b). The I-Track Enhanced Surveillance of Risk Behaviours among Injecting Drug Users project reported HCV prevalence rates from between 60% (Regina) and 79.3% (Victoria) among people who use drugs by injection recruited from community needle exchange programs in five cities across Canada (PHAC, 2004b). One study of people who use drugs by injection in Vancouver reported an HCV prevalence rate of 88% (Strathdee, et al., 1997) while the “baseline prevalence” in the on-going Vancouver Injection Drug User Study (VIDUS) of 1,475 drug users in 1999 was 81.6% (Patrick, et al., 2001). The Laboratory Centre for Disease Control has gone as far as to state that “...the overall control of HCV infections in Canada depends primarily on interventions for injection drug use” (LCDC, 1999:6).

Between 1992 and 1997, the number of confirmed cases of HCV increased in Canada from 1,321 to 19,571 although the majority of this can be accounted for by detection of existing cases rather than an epidemic of new cases (Zou, Tepper and Giulivi, 2000). The high correlation between injection drug use and HCV infection is primarily due to the fact that the virus is transmitted relatively efficiently through the sharing of injection equipment while transmission through sexual contact and other modes is more difficult. This fact points to the importance of *widely* implementing programs such as needle exchanges for people who use drugs by injection to help control the spread of HCV within this high-risk population.

Substance Use in Canadian Prisons. For a number of complex social, economic, and political reasons, the majority of persons involved in the criminal justice system in Canada have measurable problems with substance misuse. Indeed, an estimated 70% of prisoners in the federal correctional system have at least low-severity problems with alcohol and/or drugs (Roy, 2001) and researchers estimate that 38–44% of federal male prisoners are dependent on at least one psychoactive substance (including alcohol) (Pernanen, et al., 2002). Although the exact proportion of prisoners using alcohol and drugs while incarcerated is difficult to assess, 38% of 4,285 federal prisoners surveyed by CSC in the 1995 National Inmate Survey reported using alcohol or drugs at least once during their current prison term (Robinson & Mirabelli, 1996).⁴ A less subjective estimate of substance use inside federal prisons is available from ran-

dom urinalysis testing. For the period from July 1996 to March 2000 11–12% of the nearly 25,000 random urinalysis tests conducted inside federal prisons were positive for at least one psychoactive substance.⁵ The most common substances detected include cannabis (9.32% of random tests), opiates (1.19% of random tests) and benzodiazepines (0.78% of random tests).⁶ More recent data from CSC’s random urinalysis program confirms this general rate of substance use with 11.12% of tests returning positive results for at least one substance in 2002–03 (CSC, 2004b). It is important to note, however, that due to confounding factors, random urinalysis is incapable of providing accurate estimates of levels of drug use in prison.

Injection Drug Use and Needle Sharing in Canadian Prisons. While the prevalence of injection drug use and rates of needle sharing in Canadian prisons are difficult to assess objectively, 11% of the 4,285 federal male prisoners surveyed in CSC’s 1995 National Inmate Survey reported injecting drugs in prison and 41% of these reported that their equipment was either not clean or that they didn’t know whether it was clean at the time of use (Robinson & Mirabelli, 1996).^{7,8} A 1995 study among provincial prisoners in Montreal found that 6.2% of men and 1.5% of women reported injecting drugs in prison (Hankins, et al., 1995). A study of provincial prisoners in Quebec City in 1995 found that 2.4% of prisoners admitted injecting drugs during imprisonment and 92% of these said they shared injection equipment while incarcerated (Dufour et al., 1995).

The association between incarceration and injection drug use can also be characterized by the proportion of people who use drugs by injection in the community that report having spent time in prison. A study of IDUs in Toronto in the early 1990s found that over 80% had been in prison at least once since beginning to inject drugs, and 25% of these reported sharing injection equipment while in custody (Millson, 1991). Similarly, 76% of 1,475 injection drug users participating in the on-going Vancouver Injection Drug User Study (VIDUS) report a history of incarceration since beginning to inject drugs and 31% of these report injecting while in prison (Woods, et al., 2004).

4 Since drug use is considered a serious infraction in prison, it is likely that these self-reports understate the true extent of substance use in Canadian federal prisons.

5 CSC’s urinalysis program tests 5% of incarcerated prisoners monthly. The testing is supposed to be random, but there are some indications that it is not administered in a perfectly random manner and this likely has an impact on the validity of the data to some degree (MacPherson, 2001).

6 It is important to note that metabolites related to opiates are cleared from the body in one to three days while metabolites related to cannabis are detectable for up to six weeks after chronic use. This makes detection of cannabis much more likely than detection of opiates and may partially explain the large difference in cannabis positives relative to positive tests for other drugs.

7 Injection drug use is also common in federal women’s prisons in Canada. In a 2003 study that interviewed approximately 40% of all federal female prisoners in Canada, 19% of the participants reported injecting drugs while in prison (DiCenso, et al., 2003).

8 Injection drug use was particularly high in the Pacific Region of the federal prison system with 23% of prisoners reporting injection drug use while incarcerated in the 1995 Inmate Survey.

Finally, recent urinalysis and search and seizure data from CSC confirms that injection drug use continues to occur in Canadian federal correctional facilities. For example, 3.84% of urinalysis tests in 2002–03 were positive for opiates⁹ and CSC seized over 300 syringes from prisoners in that fiscal year (CSC, 2004b).¹⁰

More detailed (but less representative) accounts of prison injection drug use come from ad hoc studies at individual correctional facilities. Three Canadian studies in particular are useful for gaining a better understanding of injection drug use in federal prisons:

1. SPRINGHILL INSTITUTION, NOVA SCOTIA, 1997: In response to the disclosure of wide-spread sharing of injection equipment by two HIV and HCV-positive prisoners, CSC, in cooperation with the Nova Scotia Department of Health and others, conducted a voluntary, confidential prevalence study and risk behaviour survey. Of the 194 prisoners tested and interviewed (187 male, 7 female), approximately half (94) self-identified as current or past IDUs. Results from the study include:
 - two prisoners (1%) were HIV-positive; and 53 (28%) were HCV-positive;
 - prisoners who reported current or former injection drug use showed higher rates of HIV and HCV infection than those who did not (for example, prisoners who reported injection drug use were 6.5 times more likely to be HCV-positive than those that did not inject);
 - of the 43 prisoners who reported injecting in the community during the six months prior to incarceration:
 - 11 (28%) reported borrowing needles in the community with two (18%) of these reporting that they always borrowed injection equipment in the community;
 - 15 (35%) reported lending needles in the community;
 - 43 (100%) reported having access to sterile injection equipment in the community.
 - of the 28 prisoners who reported injecting in the past six months in Springhill Institution:
 - 23 (82%) reported borrowing or renting needles inside prison with 19 (83% of those who borrowed injection equipment) stating that they always used borrowed equipment;
 - 19 (70%) reported lending injection equipment in prison;
 - 21 (75%) reported having access to sterile needles in prison (Lior, et al., 1998).

2. JOYCEVILLE INSTITUTION, ONTARIO, 1997: In late fall 1997, a prisoner in Joyceville Penitentiary near Kingston revealed that he was HIV-positive and that he had shared injection equipment with numerous other prisoners in the preceding months. Anxiety in the prison increased dramatically and the inmate committee eventually called for a general HIV prevalence study to provide anonymous testing to all prisoners so that individual drug users would not be singled out and identified. Researchers from Queen's University eventually took blood samples from 355 of the 520 prisoners (68%) in the institution. In addition, 350 prisoners completed a detailed questionnaire on risk behaviours as part of the study. The results indicate that:
 - 33% of the participating prisoners were HCV-positive and 1.7% were HIV-positive;¹¹
 - 27.1% of the study participants reported no risk factors;
 - a total of 24.3% reported IDU in prison (18.3% reported IDU both inside and outside prison and 6% reported IDU inside prison, but not outside) and 13.1% reported IDU outside prison, but not inside;
 - a total of 19.1% of participating prisoners reported sharing injection equipment in prison (11.4% reported sharing injection equipment inside and outside prison and 7.7% reported sharing inside, but not outside) and 6.6% reported sharing outside, but not inside (Ford, et al., 2000).

9 This includes both random and non-random urinalysis tests conducted within institutions. There is no way to determine the exact degree of intravenous opiate use from urinalysis data, however, because some prisoners administer their drugs orally. The number of opiate-based pills confiscated in federal prisons in Canada has increased three-fold from 534 in 1996–97 to 1,570 in 2002–03 indicating that there may be a movement toward greater oral use of opiates. However, this issue is further complicated by the fact that some users crush pills and dissolve them in water to inject them.

10 Generally speaking, seizure statistics reported by CSC are not a good measure of overall drug use levels since there is no way to determine what percentage of overall contraband substances prison authorities seize. One indication of this is the high variability in reported seizures from year to year.

11 A similar study done two years before in 1995 indicated an HCV infection rate of 27.9% and an HIV infection rate of 1% in Joyceville Institution. However, the high rate of turn-over in prisons does not allow a direct comparison of rates of infection between these two studies.

3. STONY MOUNTAIN INSTITUTION, MANITOBA, 2002: Researchers in Manitoba conducted a risk behaviour study in Stony Mountain Institution in 2002 as part of a larger study of IDUs in Winnipeg. Forty prisoners participated in the study out of a total population of 420 prisoners. Results of the study include:
- 39 (97% of study participants) reported ever having injected drugs;¹²
 - 21 (53%) reported injecting drugs during their current prison term;¹³ of these:
 - 18 (86% of prison injectors) reported they had ever injected with a used needle in prison; of these:
 - 10 (56% of those injecting with used needles) reported that they injected with used needles “most/all of the time” and eight (44%) reported they injected with used needles “rarely or sometimes.”
 - 18 (100% of those injecting with used needles) reported that they usually cleaned their injection equipment; of these:
 - 15 (83%) reported that they usually cleaned their equipment with bleach
 - two (11%) reported that they usually cleaned their equipment with water and bleach
 - 14 (67% of prison injectors) reported they shared cookers, rinse water or cotton with others;
 - seven (18%) reported having stopped injecting while in the community before their arrest/incarceration;
 - 11 (28%) reported stopping injecting as a result of being arrested or imprisoned (Wylie, 2004).¹⁴

Findings from these types of in-depth analyses of prison injection drug use are invaluable both for determining the need for harm reduction programs and for creating responses that will actually reduce harms among incarcerated IDUs. From the above studies, several findings are worth highlighting:

- Many prisoners who continue to use drugs by injection inject less frequently in prison than they do when they are in the community.¹⁵
- IDUs share injection equipment much more often in prison than they do in the community.
- In the Stony Mountain study, prisoners report cleaning their injection equipment more frequently in prison than in the community and also report using bleach, or bleach mixed with water,

more frequently than in the community.

- Drug use patterns shift considerably between the community and prison with drug availability and drug quality seeming to be important factors in determining use patterns and frequency.
- Some prisoners begin injecting while incarcerated. The two prisoners reporting this behaviour in the Stony Mountain study suggested that their need to relate to peer groups and “fit in” figured significantly in their decision to start injecting in prison.
- A sizeable proportion of IDUs stop injecting on arrest and/or imprisonment and the lack of access to sterile equipment appears to be one of the reasons given for not continuing to inject in prison (although this reason was directly mentioned by only 1 of 11 prisoners who stopped injecting on arrest in the Stony Mountain study.)

From this information it is clear that introducing sterile needles in prison could affect a variety of behaviours, both positively and negatively. Any comprehensive evaluation of needle exchange programs will therefore need to include strong ethnographic data collection components for the assessment of these types of potential behavioural affects.

Prevalence of HIV/AIDS and HCV in Canadian Correctional Populations. Numerous studies document that the prevalence of HIV and HCV in federal and provincial prisoner populations in Canada is many times higher than in the general population (De et al., 2004; Landry, et al., 2004; Ramuscak, et al., 2004; Health Canada & CSC, 2004; Ford, et al., 2000). Current estimates suggest that the overall rate of HIV infection in the Canadian federal correctional system (1.7%) is over 10 times higher than the rate in the general population (0.13%) (Moloughney, 2004).¹⁶ The number of confirmed cases of HIV/AIDS in the federal correctional system in Canada rose from 14 in January 1989 to 159 in March 1996 to 233 in December 2001 and to 251 in December 2002, although some of this increase can be accounted for by increasing rates of testing and better reporting practices. Rates of HIV infection are especially high for federal female prisoners with an infection rate of 8.2% reported in CSC’s Prairie Region (CSC, 2003).

12 The selection of prisoners for this study was not random and focused on those who were current or former IDUs.

13 Of the 21 prisoners who reported injecting drugs in their current prison: 4 prisoners reported injecting 0 times in the last six months, 8 reported injecting 1-30 times in the last six months, 0 reported injecting 31-100 times in the last six months, 9 reported injecting >100 times in the last six months; 2 prisoners reported that no other persons were present when they injected, 7 reported that they injected with 1-2 people present, 11 reported that 3 or more people were present; 3 prisoners reported that they obtained needles from no one, 8 reported that they obtained needles from one other person, 10 reported that they obtained injection equipment from 2-3 people; 9 prisoners reported that they injected with more than one group of people in prison with 3 reporting injecting with 2-3 different groups of people, 2 prisoners reporting injecting with four groups of people and 1 reporting injecting with six different groups of people.

14 The 11 prisoners who stopped injecting on arrest or imprisonment were asked why they ceased injecting in an open-ended question. Reasons given typically centred on a concern for their health and a desire to change their lives, or problems associated with injecting in a prison environment (e.g., limited opportunities to inject or drug availability and quality). One of the 11 prisoners specifically reported that he stopped injecting due to his inability to get clean injection equipment and his resulting concern over HIV infection.

15 This finding concurs with those from larger studies in other countries. See Muller et al., 1995 and Weild et al., 2000.

16 Similarly, studies conducted in provincial prisons in Quebec, BC and Ontario estimate that HIV infection rates are 10-60 times higher than in the general Canadian population, ranging from 1.0% to 7.7%.

Rates of HCV infection among Canadian federal prisoners are even higher than those for HIV with the overall estimated prevalence rate in 2002 (26%) more than 30 times higher than the general Canadian population (0.8%) (CSC, 2004a).¹⁷ Once again, rates of HCV infection are higher for federal female prisoners than male prisoners. In 2002, federal female prisoners had an overall HCV prevalence rate of 34% while federal male prisoners had a rate of 26% (De et al., 2004).¹⁸

Evidence of Transfers of Diseases from Sharing Needles in Prisons. Analyses of risk factors related to hepatitis B and C and HIV from around the world and Canada demonstrate that sharing injection equipment in prison is often a statistically significant predictor of infection rates (Elwood Martin, et al., 2005; Long et al., 2001; Stark, et al., 1997; Muller et al, 1995).¹⁹ Although once considered rare occurrences, there are now several well-documented cases of groups of prisoners transmitting blood-borne diseases among themselves through needle sharing. For example, in 1993 at least eight prisoners became HIV-positive (seroconverted) in a six-month period from sharing injection equipment in Glenochil Prison in Scotland (Taylor, et al., 1996; Taylor & Goldberg, 1996).²⁰ The 1997 follow-up study of this case showed that 13 prisoners had been infected from a common source. Similarly, epidemiological and DNA evidence confirmed that eight prisoners HIV seroconverted due to needle sharing while incarcerated in an Australian prison in the early 1990s (Kinlock et al., 1993).²¹

Although evidence strongly suggests that both HIV and HCV have been transferred among prisoners who inject drugs in Canada, currently no conclusive evidence exists to prove specific instances of transfer. For example, the Springhill and Joyceville Institution studies discussed previously could be classed as “outbreak” studies. Unfortunately, no effort was made in these cases to confirm that any seroconversions occurred because of needle sharing inside the prisons. However, in 2002, Jason Pothier, who had been in detention for almost all of the previous eight years and in the federal correctional system in Canada since September 1997,

sued CSC for damages for the Service’s alleged negligence related to his infection with HIV and HCV and to his medical care after becoming infected with HIV while in prison. The charges were based on common law principles of negligence and breach of fiduciary duty and on the *Charter of Rights and Freedoms*. Mr. Pothier alleged that he contracted HIV and HCV after becoming addicted to heroin in prison and sharing used needles with other prisoners. Aware of the risks of using contaminated needles to inject, Mr. Pothier asked CSC to place him on methadone maintenance treatment several times, but rules in place at that time did not allow him to receive the treatment. Mr. Pothier sued CSC alleging that the Service must be held responsible for his infection because of its failure to treat him with methadone when it knew that he would likely contract HIV because of his heroin addiction, and the Service’s refusal to make sterile injection equipment available to prisoners who inject drugs. The case has very recently been settled out of court with no further details available.

Examples of Existing Demand and Harm Reduction Programs in Canadian Prisons. All prison systems in Canada have programs to reduce the demand for illicit substances and reduce harms among prisoners who use drugs; however, the sophistication of their approaches varies significantly (Lines, 2002).²² For example, CSC has a comprehensive substance abuse treatment regime that provides accredited, evidence-based programming to thousands of prisoners annually based on individualized risk and need assessments (Thomas, 2003). In contrast, substance abuse treatment programs in most provincial prison systems in Canada are not as well-designed and do not meet the full demand for treatment among prisoners. In terms of reducing potential harms among prison injectors, three programs at the federal level deserve special consideration: providing bleach for sterilizing drug injection equipment, methadone maintenance treatment (MMT) for prisoners dependent on opiates, and the Safer Tattooing Practices Initiative (STPI) pilot program.²³

17 The rates of infection of HIV and HCV in most prison systems around the world are also generally much higher than rates in general populations. The prevalence of HIV/AIDS and HCV in prison populations is generally related to two conditions: (1) the proportion of prisoners who injected drugs prior to incarceration, and (2) the rates of infection among people who inject drugs in the wider community (Lines, 2002:5).

18 Data on the prevalence of HCV among provincial prisoners in Canada are not widely available. BC conducted a prevalence study in the early 1990s, but these data are dated (Prefontaine et al., 1994). In recent survey research from the Burnaby Correctional Centre for Women in BC, however, 52% of prisoners indicated they were HCV-positive and 8% indicated that they were HIV-positive (Elwood Martin et al., 2005). Researchers in Quebec published an HCV prevalence study in 2004 based on a sample of 1,617 provincial prisoners (1,357 men and 250 women) and reported an infection rate of 16.6% for men and 29.2% for women (Landry et al., 2004). Ontario recently undertook an HCV prevalence study of remand prisoners in the province and presented preliminary results in 2004 (Ramuscak, et al., 2004).

19 It is significant that recent research indicates that the amount of time spent in prison is a statistically significant predictor of rate of needle sharing among IDUs participating in the VIDUS study in Vancouver, BC. See Woods et al., 2004.

20 Post-outbreak testing confirmed that a total of 14 IDUs in Glenochil were HIV-positive, but incontrovertible evidence of transmission in the prison could be established in only eight cases. Researchers studying the outbreak, however, strongly suspect that most of the remaining six were also infected in the prison because 13 of the 14 HIV-positive inmates carried the same strain of the virus. Significantly, one of the prisoners who contracted the virus in the prison reported that he always cleaned his injection equipment with bleach prior to use.

21 For more examples of confirmed cases of disease transfer in prison due to needle sharing, including cases from the U.S., Lithuania, Russia and Germany, see Lines et al., 2004:9-12, Canadian HIV/AIDS Legal Network 2004b; Dolan, 1998.

22 All prisons also have numerous enforcement programs and policies for reducing the supply of drugs. These include activities such as intelligence gathering, random urinalysis testing, search and seizure protocols, the use of ion scanners, etc.

23 Other programs and policies that fall into the demand reduction/harm reduction categories include providing prisoners with condoms and lubricant to practise safer sex, anonymous hepatitis and HIV testing, hepatitis A and B immunization programs and education programs such as the Peer Education Counselling (PEC) program used by CSC.

BLEACH: Research demonstrates that bleach, when used appropriately, can reduce the risk of HIV being spread among people who use drugs by injection and share needles. Unfortunately, bleach, even when used appropriately, is not very effective for controlling the spread of HCV because the virus is much more resilient than HIV. Numerous prisons around the world provide bleach to prisoners explicitly for the cleaning of needles, including prisons in Scotland, Germany, France, Denmark, Finland, Greece, Italy, Australia, Switzerland, Belgium, Luxembourg, and the Netherlands (Wiessing, 2001). Significantly, no prison that has agreed to provide bleach to prisoners for the sterilization of needles has ever rescinded that policy (Canadian HIV/AIDS Legal Network, 2004a). Table 1 shows the availability and accessibility of bleach in Canadian prisons as of September 2002.

Table 1: The Availability and Accessibility of Bleach in Canadian Prisons, 2002

Jurisdiction	Bleach Available	Bleach Accessible ²⁴
Alberta	No	0
British Columbia	Yes	4
Federal (CSC)	Yes	2
Manitoba	No	0
New Brunswick	No	0
Nfld. and Labrador	Yes	4
Northwest Territories	No	0
Nova Scotia	No	0
Nunavut	No	0
Ontario	No	0
PEI	No	0
Quebec	Yes	2
Saskatchewan	No	0
Yukon Territory	No	0

Source: Lines, 2002.

While providing bleach is one strategy for reducing the risk of transmission of blood-borne diseases among prisoners who use drugs by injection, there are several reasons why this option does not represent a completely adequate response to HIV and HCV in prison. First, several studies now suggest that bleach is not entirely effective at *eliminating* HIV and especially HCV in syringes (Tweed & Kraiden, 2004; Titus et al., 1994). Second, studies have shown that many people who use drugs by injection do not practise the proper method of using bleach as a disinfectant and, even when they do, do not practise it consistently (Carlson et al., 1998; Jamner et al., 1996). Indeed, a recent structured literature review conducted by the World Health Organization suggests that there is little evidence available that suggests that under “real world” conditions, bleach is an effective prevention against the transfer of HIV among people who use drugs by injection (WHO, 2004). Finally, one set of authors suggested that due to the effects of low concentrations of bleach on the tissues of drug users and the HIV virus itself, the reuse of needles cleaned with bleach may actually *increase* the risk of HIV transmission among users who share syringes (Contoreggi et al., 2000). This disturbing hypothesis is based on experimental lab results and has yet to be empirically verified in any field studies. It does, however, provide further caution for viewing bleach alone as an adequate response to the transmission of blood-borne diseases among people who use drugs by injection.

METHADONE MAINTENANCE THERAPY (MMT): Methadone maintenance therapy is the current “gold standard” for treating substance abusers dependent on opiates such as heroin and morphine. Methadone is a synthetic drug that acts as a replacement for opiates in the body and thus can greatly lessen withdrawal symptoms and cravings. At higher doses, methadone also reduces the euphoric effects of opiates, thus providing dependent persons additional protection against relapse (Strain et al., 1999). In 1993, the World Health Organization (WHO) issued guidelines for addressing the spread of HIV/AIDS in correctional facilities, which, among other things, recommended the provision of methadone maintenance therapy to incarcerated populations (WHO, 1993). Numerous prisons in the world now provide opiate-dependent prisoners access to methadone therapy, including correctional facilities in Europe, the United States and Australia (Stöver, Hennebel & Casselmann, 2004; Kerr & Jürgens, 2004).

²⁴ Accessibility scored from 0-4 based on ease of access for prisoners and discreetness of dispensing practices. Higher numbers indicate greater accessibility and discreetness.

As late as 1996, no correctional jurisdiction in Canada provided methadone therapy to prisoners (CSC, 1994). By 2002, however, most correctional jurisdictions in Canada had made methadone therapy available to opiate-dependent prisoners with medically determined need. Table 2 depicts Canadian correctional jurisdictions that allowed both the *continuation* of MMT for prisoners who entered jail or prison while under MMT, and those that allowed prisoners to *initiate* treatment while incarcerated as of September 2002:

Table 2: Availability of Methadone Maintenance Therapy in Canadian Prisons, 2002

Jurisdiction	Continuation of MMT	Initiation of MMT
Alberta	Yes ²⁵	No
British Columbia	Yes	Yes
Federal (CSC)	Yes	Yes
Manitoba	Yes ²⁶	No
New Brunswick	Yes	No
Nfld. and Labrador	No	No
Northwest Territories	Yes	No
Nova Scotia	Yes	No
Nunavut	No	No
Ontario	Yes	Yes ²⁷
PEI	No	No
Quebec	Yes	Yes
Saskatchewan	Yes	Yes ²⁸
Yukon Territory	Yes	Yes

Source: Lines, 2002.

SAFER TATTOOING PRACTICES INITIATIVE: The improper handling and cleaning of tattooing equipment is a risk factor for infectious diseases such as HIV and HCV (Hellard et al., 2004). Tattooing is a popular activity among prisoners in spite of the fact that it is prohibited within most prison systems. In the 1995 National Inmate Survey, for example, almost half of all male federal prisoners admitted that they were tattooed in prison.²⁹ Illicit tattooing creates hazards for both prisoners and staff because tattooing equipment, and tattooing itself, is done clandestinely and therefore often lacks basic precautions for limiting the spread of disease (Collins et al., 2003). The popularity of tattooing and the potential for the spread of disease and injury prompted the Expert Committee on AIDS in Prison to call for a pilot safe tattooing project in its 1994 final report (CSC, 1994).

In 2004, Correctional Service Canada, with funding and cooperation from the Public Health Agency of Canada (PHAC),

announced the Safer Tattooing Practices Initiative (STPI) pilot project (CSC, 2004a). The objectives of the STPI are (1) to minimize the risk of transmission of infectious diseases in the inmate population and to the community at large, (2) to minimize the risk of CSC staff injuries, (3) to educate inmates regarding the transmission of infectious diseases, and (4) to promote health and wellness while maintaining security (CSC, 2004a:16). The project is seen as a logical extension of CSC’s existing disease prevention and control activities such as hepatitis A and B immunization and the Peer Education and Counselling (PEC) Program. Guidelines for the STPI are now finalized and the program is being implemented in six prisons across Canada.³⁰ The project will be evaluated at the end of its first year and a decision will be made as to whether tattooing should become a regular part of federal prison operations in Canada. There are several important similarities between the STPI and needle exchange, including the possibility of using the same process (collaboration between CSC and the Public Health Agency of Canada) to design and implement pilot prison-based needle exchange projects in Canada. This topic will be revisited in the Discussion and Recommendations section below.

Thus, while the availability of harm reduction measures in Canadian correctional systems is uneven, all jurisdictions provide some form of demand reduction programming (education/treatment) and most also have policies and programs for reducing harms among prisoners who use drugs by injection. In addition, based on the experiences with bleach, methadone and the Safer Tattooing Practices Initiative, harm reduction programs and policies seem to be gaining greater acceptance over time.

To summarize and restate the background information presented so far:

- Injection drug use and the sharing of injection equipment are confirmed as major risk factors for the spread of blood-borne diseases such as HIV and HCV.
- Large numbers of injection drug users are incarcerated in Canadian federal and provincial prisons and a non-trivial proportion of these continue to inject drugs while in prison.
- Most injection drug use in Canadian prisons involves needle sharing (estimates from self-reported data range from 60% to 90%).
- Needle exchange programs are an effective way to reduce the spread of blood-borne diseases among people who use drugs by injection and share needles.
- There are several confirmed cases of HIV outbreaks in prisons.
- The prevalence of HIV and HCV in correctional populations in Canada is significantly higher than in the general population.

25 As of 2002, Alberta allowed prisoners who entered prison on methadone to continue MMT for up to one month and then required them to be weaned off the drug.

26 As of 2002, MMT was only available to Manitoba prisoners in the Winnipeg area.

27 As of 2002, initiation of MMT in Ontario was available only for female prisoners who were pregnant.

28 As of 2002, the initiation of MMT is available to prisoners in Saskatchewan only by approval of the Assistant Deputy Minister.

29 Tattooing is also fairly popular among federal women prisoners in Canada. In a large survey conducted in 2003, 27% of female prisoners said they were tattooed while incarcerated (DiCenso et al., 2003).

30 The six pilot tattooing sites are: Matsqui and Fraser Valley Institutions in BC, Stony Mountain Institution in Manitoba, Bath Institution in Ontario, Cowansville Institution in Quebec and Atlantic Institution in New Brunswick.

- Prison systems in Canada currently use a number of policies and programs for dealing with prisoners who use drugs, including innovative harm reduction programs such as the Safer Tattooing Practices Initiative.

The next section reviews the international experience with prison-based needle exchanges with particular emphasis on evaluations of the effects of providing prisoners with sterile injection equipment and the effectiveness for reducing harms among prisoners who inject drugs.

International Experiences with Prison-Based Needle Exchange Programs

The first official prison-based needle exchange program in the world started as an act of medical disobedience in a Swiss prison in 1992 where a part-time physician began distributing needles to prisoners without seeking the permission of prison administrators. When the doctor's activities were discovered, the warden listened to the arguments in favour of providing needles and became convinced of its necessity (Lines et al., 2004). Thirteen years later there are at least 50 prisons with needle exchanges in six countries: Switzerland, Germany, Spain, Moldova, Kyrgyzstan and Belarus (Lines et al., 2004). Although most countries have only a few prisons with operating needle exchange programs, Spain and Kyrgyzstan require every prison in the country to make sterile syringes available to prisoners.³¹

The distribution of syringes to prisoners is managed differently in the various countries currently operating programs; however, there are basically four methods: (1) distribution through prison nurses or physicians based in the medical unit or other areas of the prison; (2) distribution through external, non-governmental organizations or other professionals who come into the prison for this purpose; (3) distribution through prisoners trained as peer outreach workers; and (4) distribution through automated "vending" machines where used syringes are inserted and exchanged one for one for clean ones. Comparisons of the advantages and disadvantages of each of these methods is highly dependent on the top-level goals of the program. For example, strict adherence to the "one for one" rule of exchange may in some circumstances compromise the goal of providing clean syringes for every injection since in some cases, prisoners will inject numerous times over the course of a day. With this caveat in mind, the four methods of distribution are compared below (adapted from Lines et al., 2004):

1. Hand-to-Hand Distribution by Prison Nurses and/or Physicians

Advantages:

- Provides personal contact with prisoners and an opportunity for counselling
- Can facilitate outreach and contact with previously unknown drug users
- Prison maintains high degree of control over access to syringes

Disadvantages:

- Lower degree of anonymity and confidentiality, which may reduce the participation rate (although high acceptance by prisoners is possible if confidentiality is maintained)
- Access more limited, as syringes are available only during the established hours of the health service (this is particularly true if the prison follows a strict one-for-one exchange policy)
- Creates possibility of proxy exchanges by prisoners obtaining syringes on behalf of those who do not want to participate in person due to lack of trust with staff

2. Hand-to-Hand Distribution by Peer Outreach Workers

Advantages:

- High acceptance by prisoners
- High degree of anonymity and trust
- High degree of accessibility (peer outreach workers live in the prison units and are available at all hours)

Disadvantages:

- No direct staff control over distribution; this can lead to increased fears of workplace safety among staff
- One-for-one exchange more difficult to ensure

3. Hand-to-Hand Distribution by External Organizations or Health Professionals

Advantages:

- Provides personal contact with prisoners and an opportunity for counselling
- Facilitates outreach to and contact with previously unknown drug users
- Prison has opportunity to maintain high degree of control over access to syringes
- One-for-one exchange or multiple syringe distribution possible (as necessary, and as reflects individual prison policy)
- Provides a higher degree of anonymity and confidentiality as there is no interaction with prison staff

Disadvantages:

- Access is limited. Syringes only available during set hours or set times of the week (this is particularly true if the program follows a strict one-for-one exchange policy)
- Anonymity and confidentiality may be compromised by policies that require the external agency to provide information on participation to the prison
- There can be mistrust by prison staff of the external services providing syringes
- External workers may experience more barriers in dealing with the prison bureaucracy than internal prison health staff
- Turnover in staff of non-governmental organization may result in a lack of program continuity and lack of a consistent "face" for the program for prisoners and prison staff

31 In addition, officials in Poland and the Ukraine have announced that they will be implementing pilot prison-based needle exchanges in the near future.

4. Automated Dispensing Machines

Advantages:

- High degree of accessibility (often multiple machines are in various places in the institution and can be accessed outside the established hours of the medical service)
- High degree of anonymity as there is no involvement with staff
- High acceptance by prisoners
- Strict one-for-one exchange

Disadvantages:

- Machines are vulnerable to vandalism and damage by prisoners and staff who are not in favour of this program
- Technical problems with functioning of the dispensing machines can mean syringes are unavailable for periods of time; this can decrease prisoner confidence in the program
- Some prisons are not architecturally suited for the use of dispensing machines (i.e., lack of discrete areas freely accessible to prisoners in which machines may be placed)
- Because the machines must be custom designed and individually constructed, the expense of providing them in sufficient numbers in multiple prisons can be prohibitive for some prison systems.

Most currently operating prison-based needle exchange programs in the world began with pilot studies and at least 10 of these included systematic evaluations of their effects on risk behaviours and their overall effectiveness. These evaluations were either one or two years in duration and collected data through a variety of means (survey questionnaires and interviews with prisoners and staff, reviews of medical files, prevalence testing for HIV and hepatitis, etc.) Table 3 shows the results of these evaluations in summary form.

Table 3: Overview of Evaluations of Pilot Needle Exchange Programs in 10 European Prisons in Three Countries

Prison, Country	Drug Use	Injection of Drugs	Needle Sharing	Incidence of HIV/HCV
Am Hasenberge, Germany	No increase	No increase	Strongly reduced	No data
Basauri, Spain	No increase	No increase	No data	No seroconversion
Hannöversand, Germany	No increase	No increase	Strongly reduced	No data
Hindelbank, Switzerland	Decrease	No increase	Strongly reduced	No seroconversion
Lehrter Strasse, Germany	No increase	No increase	Strongly reduced	No data
Lichtenberg, Germany	No increase	No increase	Strongly reduced	No data
Lingen I, Germany	No increase	No increase	Strongly reduced	No seroconversion
Realta, Switzerland	Decrease	No increase	Single cases	No seroconversion
Vechta, Germany	No increase	No increase	Strongly reduced	No seroconversion
Vierlande, Germany	No increase	No increase	No change	No data

Source: Stöver & Nelles, 2003.

Among the other important findings from these evaluation studies is the fact that in no case did prisoners use syringes as weapons against either other prisoners or staff.³² In addition, there is evidence of ancillary health and social benefits associated with the implementation of needle exchange programs such as reductions in abscesses, reductions in overdose incidents and deaths³³, increases in referrals to drug treatment programs, reduction of tension among prisoners and staff, increases in awareness about disease transmission and risk behaviours, etc. (Rutter, et al., 2001).

To summarize the evidence for the effectiveness and feasibility of prison-based needle exchange programs, a comprehensive review of this topic published in 2004 suggests that prison-based needle exchange programs:

- do not endanger staff or prisoner safety, but instead make prisons safer places to live and work;
- do not increase overall drug consumption or rates of injection drug use;
- reduce the prevalence of risk behaviours and disease (HCV and HIV) transmission;
- have been effective in a wide range of prison types and sizes;
- have a number of positive effects on health and social conditions in prisons;
- have successfully employed different methods of distribution to meet the needs of staff and prisoners in a range of prisons (Lines et al., 2004:iii).

32 In fact, syringes have not been used as weapons in any prison with an operating needle exchange program. This is significant since prison staff often express concern about this possibility in discussions of prison needle exchange programs.

33 For example, the Swiss prison of Hindelbank averaged between one and three heroin overdose deaths a year in the period before introduction of the needle exchange program, but in the nine years since the program has been in operation, only one prisoner died of heroin overdose (Lines, et al., 2004:49).

Despite the robustness of the findings on the feasibility and efficacy of prison-based needle exchange programs, there are also several limitations of existing studies, including the fact that they rely on self-reports to collect information on drug use, needle sharing and, in some instances, disease incidence and prevalence.³⁴ The use of self-reports is necessary given the nature of the prison environment, but biases inherent in self-reports must be kept in mind when interpreting these data. In addition, this means that care should be taken when designing data collection methods to preserve prisoner anonymity and thus reduce the extent of self-report bias.

Finally, it should be noted that several needle exchange programs in German prisons have been cancelled in recent years due to political pressure. In all instances, the programs were cancelled without any references to problems with the operation or efficacy of the programs. In many cases, the intervening politicians cited lack of support from prison staff as justification for their termination; however, in at least two prisons, staff have publicly stated their support for the needle exchange programs and have asked that they be reinstated (Lines et al., 2004:28-29). These events demonstrate the precarious political status of prison-based needle exchange programs and highlight the importance of incorporating systematic evaluations so that decisions can be based on evidence rather than on political considerations.

The next section looks at the various rationales for implementing pilot prison-based needle exchange projects in Canada.

Rationales and Previous Calls for Pilot Prison-Based Needle Exchange Projects in Canada

There are several rationales that can be used to justify the implementation of pilot prison-based needle exchange projects in Canada in addition to the public health rationale developed at length above.

*Legal/Constitutional Rationales.*³⁵ There are numerous instruments at the international level that directly or indirectly address the rights of prisoners, including those related to access to health care. The two basic types of instruments that exist in the international sphere include international law, which includes conventions and charters that legally bind signatory countries to their provisions, and international declarations, standards and guidelines, which serve as guidelines for policy, but are non-binding. A number of international laws are relevant to the issue of prisoner health, including the International Covenant on Civil and Political Rights, the International Covenant on Economic, Social and Cultural

Rights, etc. Most international human rights law, however, is based on the UN Universal Declaration of Human Rights, which has the status of customary international law and is therefore binding on all states. The Universal Declaration sets out that all states are legally bound to respect, protect and fulfil the following human rights, among others:

- right to equality and non-discrimination
- right to life
- right to security of the person
- right not to be subjected to torture or cruel, inhuman, or degrading treatment or punishment
- right to enjoyment of the highest attainable standard of physical and mental health.

In interpreting these basic human rights in the context of imprisonment, the international community generally accepts the principle of “limited exceptionalism”, which states that prisoners retain all civil rights that are not expressly, or by necessary implication, taken away by incarceration, including those relevant to the maintenance of good health.

This international legal foundation serves as a basis for several non-binding instruments that include elements directed specifically at health care in prison settings. These include Basic Principles for the Treatment of Prisoners, Body of Principles for the Protection of All Persons under Any Form of Detention or Imprisonment, Standard Minimum Rules for the Treatment of Prisoners, WHO Guidelines on HIV Infection and AIDS in Prison, International Guidelines on HIV/AIDS and Human Rights, etc. Although these instruments have different points of emphasis on the topic of prisoner health, one point that they all have in common is the principle of “equivalence”, which maintains that governments are obliged to provide health care to prisoners equal with that provided in the community, including preventative health measures. Basically, the principle of equivalence suggests that the state’s duties with respect to health do not end at the prison gate. The WHO Guidelines on HIV in Prisons is the most pointed on the topic of prison-based needle exchange programs, going as far as to recommend that countries that have operating needle exchange programs in the community (which Canada has had since the late 1980s) should also provide this proven disease prevention program to incarcerated persons (WHO, 1993).³⁶

34 Only one of the studies reviewed by Rutter, et al. (2001) used voluntary blood tests to confirm the absence of seroconversion among study participants and that was the Hindelbank pilot project in Switzerland. It is important to note, however, that several of the studies used self-reports from staff as well as prisoners to evaluate drug use in the prisons and in all cases staff reported that drug use did not increase.

35 This section is largely a summary of material presented in Lines, et al., 2004:14-18.

36 There are other, non UN-based declarations that have a bearing on the issue of preventative health care in prisons. The most relevant is the Oath of Athens for Prison Health Professionals, which “recognize[s] the right of the incarcerated individuals to receive the best possible health care” and undertakes that “medical judgments be based on the needs of our patients and take priority over any non-medical matters” (International Council of Prison Medical Services. Oath of Athens for Prison Health Professionals. Adopted 10 September 1979).

Canada has ratified both the International Covenant on Civil and Political Rights and the International Covenant on Economic, Social and Cultural Rights and is therefore legally bound to respect, protect and fulfil basic human rights, including the right to the highest attainable standard of health for all citizens (including prisoners). In addition, some legal scholars have interpreted sections 7, 12 and 15 of the Canadian Charter of Rights and Freedoms as potentially providing the legal basis for prisoner access to sterile syringes (Jürgens, 1996).³⁷

The federal correctional system in Canada is governed by the Corrections and Conditional Release Act (CCRA) and accompanying regulations. Sections 85 and 88 of the CCRA mandates CSC to provide every prisoner with essential health care and reasonable access to non-essential mental health care that will contribute to his or her rehabilitation and reintegration. In addition, the CCRA states that prison medical care “shall conform to professionally accepted standards.” As a result, some legal scholars in Canada have argued that since needle exchange programs are now part of the accepted standard of health care for people who use drugs by injection in the community, they should be made available to injection drug users in Canadian federal prisons (Lines, et al., 2004). Finally, Malkin (1996) applied Canadian tort law to the issue of HIV transmission in prison and concluded that governments and prison authorities may be vulnerable to legal challenges for denying prisoners access to sterile syringes if a prisoner could demonstrate that he or she contracted HIV while incarcerated as a result of sharing needles with other prisoners. The fact that Correctional Service Canada settled out of court on the Pothier case discussed above lends some credence to this argument.

Moral/Ethical Rationales. The United Nations Commission on Human Rights perhaps put the moral and ethical obligation of governments for preventing the spread of infectious diseases among prisoners most succinctly when it wrote:

[B]y entering prisons, prisoners are condemned to imprisonment for their crimes; they should not be condemned to HIV and AIDS. There is no doubt that governments have a moral and legal responsibility to prevent the spread of HIV among prisoners and prison staff and to care for those infected. They also have the responsibility to prevent the spread of HIV among communities. Prisoners are the community. They come from the community, they return to it. Protection of prisoners is protection of our communities (UN Commission on Human Rights, 1996).

The moral and ethical obligation to implement programs known to be effective for preventing disease may be especially relevant to prison medical staff aspiring to uphold professional standards around the care of prisoners. Indeed, as described above, moral considerations played a consequential role in the development of the first prison-based needle exchange program in the world in Switzerland when a part-time prison doctor began distributing needles to prisoners who used drugs by injection because he could not in good conscience stand by and watch prisoners engage in behaviours that put them at risk without acting. When one considers the wealth of evidence on the extent and nature of injection drug use in prisons in Canada, the potential role of these behaviours in the spread of infectious diseases among prisoners and the community, and the accumulated evidence of the effectiveness of needle exchange programs for limiting the spread of diseases among IDUs, it is difficult to imagine not taking action on this issue if one is devoted to improving the health and lives of prisoners. The next section presents a brief summary of previous calls for pilot prison-based needle exchange programs in Canada.

³⁷ Section 7 of the Charter upholds the right not to be deprived of the right to life, liberty and security of the person except in accordance with the principles of fundamental justice; Section 12 protects against cruel and unusual punishment, and Section 15 guarantees the right to equality before and under the law and the right to equal protection and benefit of the law without discrimination on the basis of certain personal characteristics.

³⁸ See: Prisoners' HIV/AIDS Support Action Network (PASAN) (1992). HIV/AIDS in prison systems: A comprehensive strategy. Toronto: PASAN. Downloaded December 14, 2004, from http://www.pasan.org/Publications/HIV-AIDS_in_Prison_Systems_92.pdf

Previous Calls for Pilot Prison-Based Needle Exchange Programs in Canada. The Prisoners' HIV/AIDS Support Action Network (PASAN) first raised the topic of implementing pilot prison-based needle exchange programs in Canada in 1992.³⁸ Since then, numerous governmental and non-governmental organizations and working groups have reviewed this issue and recommended pilot projects to test its efficacy and feasibility in Canada. These organizations include CSC's Expert Committee on AIDS in Prison (CSC, 1994), Canadian HIV/AIDS Legal Network (Jürgens, 1996 & Lines et al., 2004), Task Force on HIV/AIDS and Injection Drug Use (1997), Prisoners' HIV/AIDS Support Action Network (Scott & Lines, 1998; DiCenso et al., 2003), CSC's Study Group on Needle Exchange Programs (1999), the Canadian Human Rights Commission (2003), the Ontario Medical Association (2004), the Correctional Investigator of Canada (2004) and the Canadian Medical Association (2005).³⁹

Possible Courses of Action

The pressure for Canada to consider the implementation of prison needle exchange programs is mounting as the evidence for the prevalence of high-risk behaviours and infectious diseases within offender populations accumulates. This pressure is further enhanced by the growing evidence regarding both the safety and efficacy of PNEPs from Europe and around the world. What follows is a review of possible options available to the federal government as it confronts this growing pressure:

1. Continue to Study the Matter: In recent months, representatives from CSC and the Correctional Investigator's Office and the Public Health Agency of Canada visited prisons in Europe with operating needle exchange programs to get a first-hand look at them. One possible course of action on prison-based needle exchange, therefore, is to continue with the current strategy of studying the matter with the goal of collecting more and better information to inform decision making on this matter. Just how much information is required to make a decision is highly subjective, however, with some observers likely to suggest enough is already known and others likely to suggest that we need to know more before we can act. It is important to recognize that calls for more studies can sometimes be used as a tactic for avoiding politically tough decisions and, given the increasing pressure coming from certain quarters on the need for a pilot study in Canada, at some point a decision will likely need to be made even in the absence of complete information.

2. Implement *Pilot Prison Needle Exchange Programs in Select Facilities:* This course of action would allow CSC to test the feasibility and efficacy of prison-based needle exchange programs in Canada, and also collect information useful for informing the implementation of operational programs in the future. One argument against using information from the European experience to justify the implementation of prison-based needle exchanges in Canada has been that prisons in Canada differ significantly from prisons in Europe and that PNEPs would not work here as they have there. Implementing pilot needle exchange programs on a limited basis in select facilities would allow for the collection of empirical information to test the validity of this assertion.

3. Implement *Operational Prison Needle Exchange Programs in Select Facilities:* Given the fact that the prevalence and nature of drug use is not uniform across CSC facilities, another possible course of action is to implement operational needle exchanges in prisons where injection drug use and risky behaviours are especially problematic, such as the Matsqui Institution in British Columbia. The benefit of this approach is that sterile syringes would be made available in locations with the highest concentrations of prisoners who use drugs by injection on an on-going basis, thereby reducing the likelihood of disease transmission among prisoners. The main drawback is that drug use occurs in all federal prisons in Canada and therefore significant numbers of prisoners who use drugs by injection will not be served by the program.

4. Implement *Operational Prison Needle Exchange Programs in All Facilities:* Another possible course of action is to interpret the current evidence base as justifying the implementation of operational needle exchange programs in all federal correctional facilities in Canada. Although there are some observers who would likely support this choice based on the need for interventions to control the spread of HIV and HCV and other rationales, there are significant political and resource constraints that make this course of action more difficult to implement. For example, some stakeholders (e.g., the Union of Canadian Correctional Officers) has come out publicly against the implementation of needle exchanges in Canadian prisons and would, therefore, likely lobby strongly against this option for Canada. In addition, the sizeable costs associated with full-scale operational implementation of PNEPs across Canada may mitigate against this option.

³⁹ The CMA passed a resolution calling for CSC to implement a pilot needle exchange program in at least one prison in Canada in August 2005 at its 138th Annual General Meeting. The text of the resolution is available here: http://www.cma.ca/index.cfm/ci_id/45252/1.htm.

Conclusion

Thirteen years have passed since the first calls for piloting prison-based needle exchange programs in Canada. In that time, several countries have implemented and systematically evaluated projects demonstrating the feasibility, safety and effectiveness of this intervention for reducing needle sharing among prisoners who use drugs by injection. The four courses of action discussed above provide a continuum of possible responses for the federal government on this issue from continuing to study the matter (maintaining the status quo) to full-scale implementation of operational programs in every federal correctional facility in Canada. In making its choice, Correctional Service Canada (CSC) will need to weigh the evidence and rationales offered in favour of implementation of needle exchanges in prison against the political and economic constraints. The discussion developed here suggests that the prevalence of injection drug use, needle sharing and infectious diseases in Canadian prisons, the demonstrated effectiveness of needle exchange programs for reducing the spread of disease among people who use drugs by injection, the positive experiences with prison-based needle exchange programs in other countries, the compelling legal/constitutional and moral/ethical arguments in regard to the responsibility of governments to provide equivalent preventative health care to prisoners, and the danger from the spread of infectious diseases to both prisoners and the community all provide ample justification for the government to *consider* implementing pilot studies to assess the effectiveness and feasibility of prison-based needle exchange programs in the near future.

Bibliography

- Canadian HIV/AIDS Legal Network (2004a). Prevention: Bleach. *Info Sheet no. 5, HIV/AIDS in prison*. Downloaded on November 25, 2004 from: <http://www.aidslaw.ca/Maincontent/issues/prisons/e-info-pa5.htm>
- _____ (2004b). HIV Transmission in Prison. *HIV/AIDS in Prison Info Sheet no. 3*. Downloaded on August 25, 2005 from: <http://www.aidslaw.ca/Maincontent/issues/prisons/e-revinfo-pa3.pdf>
- Canadian Human Rights Commission (CHRC) (2003). *Protecting their rights: A systematic review of human rights in correctional services for federally sentenced woman*. Ottawa: Canadian Human Rights Commission. Downloaded on February 8, 2005 from: <http://www.chrc-ccdp.ca/pdf/reports/FSWen.pdf>
- Carlson, R., J. Wang, H. Siegal & R. Falck (1998). A preliminary evaluation of a modified needle-cleaning intervention using bleach among injection drug users. *AIDS Education and Prevention*, 10(6):523-532.
- Collins, P., G. Dias, M. Dickenson, R. Lines & L. Vidovich (2003). Driving the point home: A strategy for safer tattooing in Canadian prisons. Toronto: Prisoners' HIV/AIDS Support Action Network. Downloaded on February 8, 2005 from: http://www.pasan.org/Publications/Driving_The_Point_Home.pdf
- Contoreggie, C., S. Jones, P. Simpson, W. Lange and W. Meyer (2000). Effects of varying concentrations of bleach on in vitro HIV-1 replication and the relevance to injection drug use. *Intervirology*, 43(1):1-5.
- Correctional Investigator of Canada (2004). *Annual report of the Correctional Investigator, 2003-2004*. Ottawa: Office of the Correctional Investigator. Downloaded on February 8, 2005 from: http://www.oci-bec.gc.ca/reports/pdf/AR200304_e.pdf
- Correctional Service Canada (CSC) (2004a). *Guidelines for CSC safer tattooing practices initiative pilot*. Unpublished manuscript. Ottawa: Correctional Service Canada, NHQ-SC.
- _____ (2004b). *Urinalysis statistics and drug seizures*. Ottawa: Security Division, Correctional Service Canada. Copy on file with author.
- _____ (2003). *Infectious diseases prevention and control in Canadian federal penitentiaries 2000-01: A report of the Correctional Service Canada's infectious disease surveillance system*. Ottawa: Correctional Service Canada. Downloaded on February 21, 2005 from: <http://www.csc-scc.gc.ca/text/pblct/infectiousdiseases/en.pdf>
- _____ (1994). *HIV/AIDS in prison: The final report of the expert committee on AIDS and prisons*. Ottawa: Correctional Service Canada.

- De, P., N. Connor, F. Bouchard & D. Sutherland (2004). HIV & hepatitis C virus testing and seropositivity rates in Canadian federal penitentiaries: A critical opportunity for care and prevention. *Canadian Journal of Infectious Diseases*, 15(4):221-225.
- DiCenso, A., G. Dias and J. Gahagan (2003). *Unlocking our futures: A national study on women, prisons, HIV & hepatitis C*. Toronto: Prisoners' HIV/AIDS Support Action Network (PASAN). Downloaded on February 8, 2005 from: http://www.pasan.org/Publications/Unlocking_Our_Futures.pdf
- Dolan, K. (1998). Evidence About HIV Transmission in Prisons. *Canadian HIV/AIDS Policy and Law Newsletter*, 3(4). Downloaded on August 25, 2005 from: <http://www.aidslaw.ca/Maincontent/otherdocs/Newsletter/Winter9798/26DOLANE.html>
- Dolan, K., S. Rutter & A. Wodak (2002). Prison-Based syringe exchange programmes: A review of international research and development. *Addiction*, 98:153-158.
- Dufour, A., M. Alary, C. Poulin, F. Allard, L. Noel, G. Trottier, D. Lepine, & C. Hankins (1995). HIV prevalence among inmates of a provincial prison in Quebec City. *Canadian Journal of Infectious Diseases*, 6(Suppl. B):31B.
- Elwood-Martin, R., F. Gold, W. Murphy, V. Remple, J. Berkowitz and D. Money (2005). Drug use and risk of blood-borne infections: A survey of female prisoners in British Columbia. *Canadian Journal of Public Health*, 96(2):97-101.
- Ford, P., M. Pearson, P. Sankar-Mistry, T. Stevenson, D. Bell & J. Austin (2000). HIV, hepatitis C and risk behaviour in a Canadian medium-security federal penitentiary. *Quarterly Journal of Medicine*, 93(2):113-119.
- Hankins, C., et al., (1995). Prior risk factors for HIV infection and current risk behaviours among incarcerated men and women in medium-security correctional institutions – Montreal. *Canadian Journal of Infectious Diseases*, 6(Suppl. B):31B.
- Hankins, C., S. Gendron, M. Handley, C. Richard, M. Tung & M. O'Shaughnessy (1994). HIV infection among women in prison: An assessment of risk factors using a non-nominal methodology. *American Journal of Public Health*, 84(10):1637-1640.
- Hankins, C., et al. (1989). HIV infection in a medium security prison for women - Quebec. *Canada Diseases Weekly Report*, 1989, 15(33):168-170.
- Health Canada (2000). *Profile of hepatitis C and injection drug use in Canada: A discussion paper*. Hepatitis C Prevention, Support and Research Program, Population and Public Health Branch. Ottawa: Health Canada. Downloaded on December 14, 2005 from http://www.phac-aspc.gc.ca/hepc/hepatitis_c/pdf/careDiscCanada.pdf
- Health Canada & Correctional Service Canada (CSC) (2003). *Infectious diseases prevention and control in Canadian federal penitentiaries, 2000-2001*. Ottawa: Correctional Service Canada. Downloaded on February 8, 2005 from: <http://www.csc-scc.gc.ca/text/pblct/infectiousdiseases/en.pdf>
- Hellard, M., J. Hocking & N. Crofts (2004). The prevalence and the risk behaviours associated with the transmission of hepatitis C virus in Australian correctional facilities. *Epidemiology & Infection*. 132:409-415.
- Holtgrave, S., T. Pinkerton, P. Lurie, & D. Vlahov (1998). Cost and cost-effectiveness of increasing access to sterile syringes and needles as an HIV prevention intervention in the United States. *Journal of Acquired Immune Deficiency Syndrome & Human Retrovirology*, 18(Suppl 1):S133-138.
- Jamner, M., N. Corby & R. Wolitski (1996). Bleaching injection equipment: Influencing factors among IDUs who share. *Substance Use and Misuse*, 31(14):1973-93
- Jürgens, R. (1996). *HIV/AIDS in prison: Final report*. Montreal: Canadian HIV/AIDS Legal Network. Downloaded on February 8, 2005 from: <http://www.aidslaw.ca/Maincontent/issues/prisons/complete.pdf>

- Kerr, T. & R. Jürgens (2004). Methadone maintenance therapy in prisons: Reviewing the evidence. Montreal: Canadian HIV/AIDS Legal Network. Downloaded on February 8, 2005 from: http://www.aidslaw.ca/Maincontent/issues/prisons/MMT_150604.PDF
- Kinlock-de Loes, S., P. de Saussaure, J. Saurat, H. Stadler, B. Hirschel & L. Perrin (1993). Symptomatic primary infection due to HIV type 1: Review of 31 cases. *Clinical Infectious Diseases*. 1993(17):59-65.
- Laboratory Centre for Disease Control (LCDC) (1999). Hepatitis C prevention and control: A Public Health Consensus. *The Canadian Communicable Disease Report*, 25 (Suppl. 1):S1-S25.
- Landry, S, M. Alary, G. Godin, G. Lambert & H. Gagnon (2004). Étude de prévalence du VIH et du VHC chez les personnes incarcérées au Québec et pistes pour l'intervention. *Canadian Journal of Infectious Diseases*, 15(Suppl A):abstract 306.
- Long, J., S. Allwright, J. Barry, S. Reaper-Reynolds, L. Thornton, F. Bradley & J. Parry (2001). Prevalence of antibodies to hepatitis B, hepatitis C and HIV and risk factors in entrants to Irish prisons: A national cross sectional survey. *British Medical Journal*, 2001(323):1-6.
- Lines, R. (2002). *Action on HIV/AIDS in prisons: Too little, too late, A report card*. Montreal: Canadian HIV/AIDS Legal Network. Downloaded on February 8, 2005 from: http://www.aidslaw.ca/Maincontent/issues/prisons/prison_reportcard.pdf
- Lines, R., R. Jürgens, G. Betteridge, H. Stöver, D. Laticevski & J. Nelles (2004). *Prison needle exchange: Lessons from a comprehensive review of the international experience*. Montreal: Canadian HIV/AIDS Legal Network. Downloaded on February 8, 2005 from: <http://www.aidslaw.ca/Maincontent/issues/prisons/pnep/PNEP-report.pdf>
- Lior, L., B. J. Beal, J. Portman, E. Rud, R. Chaudhary, J. Scott and C. Archibald (1998). A look behind closed doors: Injection and sexual risk behaviour and HIV, HBV and HCV in a Canadian prison. Poster presentation # 23528 at the 12th World AIDS Conference, Geneva, June 28-July 1.
- Lurie, P., A. Reingold, B. Bowser, D. Chen, B. Foley, J. Guydish, J. Kahn, S. Lane & J. Sorensen (1993). *The public health impact of needle exchange programs in the United States and abroad*. San Francisco: University of California.
- MacPherson, D. (2001). *A framework for action: A four pillar approach to drug problems in Vancouver, Revised edition*. City of Vancouver: Vancouver, British Columbia. Downloaded on February 10, 2005 from: http://www.city.vancouver.bc.ca/fourpillars/pdf/Framework_REVISED.pdf
- MacPherson, P. (2001). Random urinalysis program: Policy, practice and research results. *Forum on Corrections Research*, 13(3):54-57. Downloaded February 16, 2005 from: http://www.csc-scc.gc.ca/text/pblct/forum/e133/133q_e.pdf
- Malkin, I. (1996). The role of the law of negligence in preventing prisoners' exposure to HIV while in custody. Appendix 1 in R. Jürgens, *HIV/AIDS in prison: Final report*. Montreal: Canadian HIV/AIDS Legal Network. Downloaded on February 8, 2005 from <http://www.aidslaw.ca/Maincontent/issues/prisons/complete.pdf>
- Millson, P. (1991). Evaluation of a programme to prevent HIV transmission in injection drug users in Toronto. Toronto: Toronto Board of Health.
- Moloughney, B. (2004). A health care needs assessment of federal prisoners. *Canadian Journal of Public Health*, 95(Supplement 1), S1-S63. Downloaded on February 8, 2005 from: http://www.cpha.ca/english/cjph/prisoners/CJPH_95_Suppl_1_e.pdf
- Muller, R., K. Stark & I. Guggenmoos-Holzmann (1995). HIV infection in prisons: High risk behaviour is common in prisons in Berlin. *British Medical Journal* 310(6989):1264.
- Ontario Medical Association (OMA) (2004). *Improving our health: Why is Canada lagging behind in establishing needle exchange programs?* Toronto: Ontario Medical Association. Downloaded on February 8, 2005 from: <http://www.oma.org/phealth/omanep.pdf>

- Patrick, D., M. Tyndall, P. Cornelisse, K. Li, C. Sherlock, M. Rekart, et al. (2001). Incidence of hepatitis C virus infection among injection drug users during an outbreak of HIV infection. *Canadian Medical Association Journal*, 165(7):889-895.
- Pernanen, K., et al. (2002). *The proportion of crimes associated with alcohol and other drugs in Canada*, Ottawa: Canadian Centre on Substance Abuse. Downloaded on February 16, 2005 from : <http://www.ccsa.ca/pdf/ccsa-009105-2002.pdf>
- Prefontaine, R., R. Chaudhary & R. Mathius (1994). Analysis of risk factors associated with hepatitis B and C infection in correctional institutions in British Columbia. *Canadian Journal of Infectious Diseases*. 5(4):153-156.
- Public Health Agency of Canada (PHAC) (2004a). Sex differences in injecting practices and hepatitis C: A systematic review of the literature. *Canada Communicable Disease Report*, 30(14).
- _____ (2004b). *I-Track – Enhanced Surveillance of Risk Behaviours Among Injecting Drug Users in Canada: Pilot Survey Report*. Downloaded on December 13, 2005 from: <http://www.phac-aspc.gc.ca/i-track/psr-rep04/index.html>
- _____ (2003). Estimates of HIV prevalence and incidence in Canada, 2002, *Canada Communicable Disease Report*, Vol. 29-23. Downloaded on February 15, 2005 from: <http://www.phac-aspc.gc.ca/publicat/ccdr-rmtc/03pdf/cdr2923.pdf>
- PHAC (2001). Hepatitis C in Canada : Viral hepatitis and emerging bloodborne pathogens in Canada, *Canada Communicable Disease Report*, Vol. 27S3, September 2001. Downloaded on February 15, 2005 from: http://www.phac.gc.ca/publicat/ccdr-rmtc/01vol27/27s327s#f_e.html
- Ramuscak, N., L. Calzavara, A. Burchell, T. Myers, P. Ford, M. Fearon, C. Swantee, C. Major & A. Anonychuk (2004). Prevalence and correlates of hepatitis C (HCV) among Ontario prisoners: preliminary results from the Ontario Remand Study. Presented at the annual conference of the Canadian Association for HIV Research, 13-16 May, 2004, Montreal, Quebec.
- Robinson, D. & L. Mirabelli (1996). *Summary of findings of the 1995 prisoner survey*. Ottawa: Correctional Service Canada. Downloaded on February 16, 2005 from: http://www.csc-scc.gc.ca/text/rsrch/briefs/b14/toce_e.shtml
- Roy, Michel (2001). The national drug strategy for the Correctional Service of Canada. *Forum on Corrections Research*, 13(3):5-6. Downloaded March 31, 2005 from: http://www.csc-scc.gc.ca/text/pblct/forum/e133/133b_e.pdf
- Rutter, S., K. Dolan, A. Wodak & H. Heilpern (2001). *Prison-Based syringe exchange programs: A review of the international research & program development (NDARC technical report # 112)*. Sydney, Australia: National Drug and Alcohol Research Centre. Downloaded on February 9, 2005 from: [http://ndarc.med.unsw.edu.au/ndarc.nsf/c2fabb74f3f54c22ca256afc00097c53/7da7f71e9589fed4ca256def0010b0e5/\\$FILE/TR.112.PDF](http://ndarc.med.unsw.edu.au/ndarc.nsf/c2fabb74f3f54c22ca256afc00097c53/7da7f71e9589fed4ca256def0010b0e5/$FILE/TR.112.PDF)
- Scott, A., & Lines, R. (1998). *HIV/AIDS in the male-to-female transsexual/transgendered prison population: A comprehensive strategy*. Toronto: Prisoners' HIV/AIDS Support Action Network. Downloaded December 14, 2004 from: http://www.pasan.org/Publications/T-S_&_T-G_in_Prison_99.pdf
- Scully, L., S. Mitchell & P. Gill (1993). Clinical and epidemiological characteristics of hepatitis C in a gastroenterology/hepatology practice in Ottawa. *Canadian medical association journal*, 148:1173-1177.
- Stark, K., U. Bienszle, R. Vonk and I. Guggenmoos-Holzmann (1997). History of syringe sharing in prison and risk of hepatitis B virus, hepatitis C virus, and human immunodeficiency virus infection among injection drug users in Berlin. *International Journal of Epidemiology* 26(6):1359-1366.
- Stöver, H., L. Hennebel & J. Casselmann (2004). *Substitution treatment in European prisons: A study of policies and practices of substitution in prisons in 18 European countries*. Wimbleton, UK: Cranstoun Drug Services Publishing. Downloaded on August 25, 2005 from : http://www.endipp.net/index.php?option=com_repository&Itemid=39&func=download&filecatid=29&chk=64395168dcec5eae8e5dc7b50e2f76ad
- Stöver, H. & J. Nelles (2003). Ten years of experience with needle exchange programmes in European prisons. *International Journal of Drug Policy*, 14(2003):437-444.
- Strain E., G. Bigelow, I. Liebson and M. Stitzer (1999). Moderate vs. high-dose methadone in the treatment of opioid dependence: A randomized trail. *Journal of American Medical Association*, 281(11):1000-1005.
- Strathdee, S., D. Patrick, S. Currie, et al. (1997). Needle exchange is not enough: Lessons from the Vancouver Injecting Drug Use Study. *AIDS*, 11:F59-F65.
- Stratton, E., L. Sweet, A. Latorraca-Walsh & P. Gully (1997). Hepatitis C in Prince Edward Island: A descriptive review of reported cases, 1990-1995, *Canadian Journal of Public Health*, 88(2):91-94.

- Study Group on Needle Exchange Programs (1999). *Final report of the study group on needle exchange programs*. Ottawa: Correctional Service Canada.
- Task Force on HIV/AIDS and Injection Drug Use. (1997). *HIV, AIDS and Injection Drug Use: A national action plan*. Ottawa: Canadian Centre on Substance Abuse; Canadian Public Health Association. Downloaded December 14, 2004 from: <http://www.cfdp.ca/hiv aids.html>
- Taylor, A. & D. Goldberg (1996). Outbreak of HIV in a Scottish prison: Why did it happen? *Canadian HIV/AIDS Policy & Law Newsletter*, 2(3). Downloaded April 7, 2005 from: <http://www.aidslaw.ca/Maincontent/otherdocs/Newsletter/April1996/14avrilE.html>
- Taylor, A., D. Goldberg, J. Emslie, J. Wrench, L. Gruer, S. Cameron, J. Black, B. Davis, J., McGregor, E. Follett, J. Harvey, J. Basson & J. McGavigan (1996). Outbreak of HIV infection in a Scottish prison. *British Medical Journal* 1995(310):289-292.
- Thomas, G. (2003). Taking the principles of effective corrections seriously in CSC's approach to the rehabilitation of drug abusing prisoners. In Gerald B. Thomas (ed.) *Perspectives on Canadian Drug Policy, Volume II*, Kingston, Ontario: John Howard Society of Canada.
- Titus, S., M. Marmor, D. Des Jarlais, M. Kim, H. Wolfe & S. Beatrice (1994). Bleach use and HIV seroconversion among New York City injection drug users. *Journal of Acquired Immune Deficiency Syndrome*, 7(7):700-704.
- Tweed, A. & M. Krajden (2004). *The effectiveness of bleach in the prevention of Hepatitis C transmission: Final report*. Public Health Agency of Canada. Downloaded on August 25, 2005 from: http://www.phac-aspc.gc.ca/hepc/hepatitis_c/library/bleach/index_e.html
- United Nations Commission on Human Rights (52nd session, item 8 of the agenda) (1996). HIV/AIDS in Prisons - Statement by the Joint United Nations Programme on HIV/AIDS (UNAIDS). Geneva, Switzerland, April 1996.
- U.S. General Accounting Office (GAO) (1993). *Needle exchange programs: Research suggests promise as an AIDS prevention strategy*. Report to the chairman, Select Committee on Narcotics Abuse and Control, House of Representatives. Report no. GAO/HRD-93-60. Washington D.C.: House of Representatives.
- Weild, A., O. Gill, D. Bennett, S. Livingstone, J. Parry & L. Curran (2000). Prevalence of HIV, hepatitis B, and hepatitis C antibodies in prisoners in England and Wales: A national survey. *Communicable Disease and Public Health*, (3):121-126. Downloaded April 4, 2005 from: <http://www.hpa.org.uk/cdph/issues/CDPHVol3/no2/bbv.pdf>
- Wiessing, L. (2001). Injecting drug users in Europe. Lisbon: European Monitoring Centre for Drugs and Drug Addiction. Downloaded on December 2, 2004 from: <http://www.drugtext.org/library/articles/peddr008.htm>
- Woods, E., W. Small, P. Spittal, C. Miller, M. Tyndall, M. O'Shaughnessy & M. Schechter (2004). Incarceration is independently associated with syringe lending and borrowing among a cohort of injection drug users. *Canadian Journal of Infectious Diseases*, 15(Suppl A): 57A.
- World Health Organization (WHO) (2004). *Effectiveness of sterile needle and syringe programming in reducing HIV/AIDS among injecting drug users*. Geneva: World Health Organization. Downloaded April 29, 2005 from: http://www.who.int/hiv/pub/prev_care/en/effectivenesssterileneedle.pdf
- World Health Organization (WHO) (1993). *WHO guidelines on HIV and AIDS in prison*. Geneva: World Health Organization.
- Wylie, J. (2004). *A pilot study assessing risk factors for hepatitis C and HIV transmission within a federal correctional institution*. Unpublished report submitted to Kim Shaw, Chief Health Services, Stony Mountain Institution.
- Zou S., M. Tepper & A. Giulivi (2000). Current status of hepatitis C in Canada. *Canadian Journal of Public Health*. 2000(91) (Suppl 1):S10-S15.