

Infectious Diseases in Canadian Federal Penitentiaries, 2000–2001

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In January 2000, the Correctional Service of Canada (CSC) implemented the CSC Infectious Disease Surveillance System (CSC-IDSS) in response to a growing need by correctional authorities for more complete data on infectious diseases in Canadian federal prisons. The CSC-IDSS represents an ongoing effort by CSC Health Services to enhance its capacity for public health surveillance in prisons. This article is based on a more comprehensive report of CSC health surveillance data, using information collected through the CSC-IDSS during 2000 and 2001.

Background

Correctional facilities in Canada are becoming increasingly important in the control of infectious diseases. The high prevalence of infectious diseases in federal prisons raises several concerns regarding the increased risk to uninfected inmates and to public health upon reintegration of infected offenders into the community. Prison inmates experience higher rates of infectious diseases than the general population. They often possess a history of high-risk behaviours such as injection drug use, trade sex and unprotected sex with high risk partners, which place them at risk of infection bloodborne and sexually transmitted diseases (STDs)² prior to their incarceration. Transmission of tuberculosis (TB) within prison settings has also been well documented in the literature.³ As such, the correctional setting presents an important public health opportunity for identifying infected persons and providing them with appropriate care, treatment and counselling to prevent future transmission of infection.

In Canada, reports indicate that the number of inmates in federal correctional facilities reported to be infected with human immunodeficiency virus (HIV) and hepatitis C virus (HCV) has grown since the early 1990s. Voluntary screening (done with the consent of the inmate) for HIV, Hepatitis B and C, STDs and TB is encouraged for all newly admitted offenders and general population inmates in CSC facilities. Screening is available throughout an inmate's federal sentence. It is provided

anytime upon request by the inmate, by recommendation of the health care professional, upon clinical indication of infection, after involvement in an incident where exposure to an infectious agent may have occurred, and prior to release from custody. Testing is accompanied by counselling as well as appropriate follow-up when treatment is necessary.

CSC Health Surveillance

Health surveillance is an integral part of disease prevention and control. The CSC-IDSS is designed to enable CSC to gather relevant health information on infectious diseases in inmates of Canadian federal penitentiaries. This information can serve to inform decisions of resource allocation for health services within CSC facilities. The performance of prevention and treatment programs can, in turn, be evaluated in light of surveillance data to guide the improvement of existing programs and the creation of new initiatives. In addition, surveillance allows CSC to examine trends in infection rates and thereby target particular high-risk groups for intervention.

All CSC institutional Health Services clinics contribute data to the CSC-IDSS through monthly surveillance reports. Surveillance data is collated, verified and analyzed by Health Canada staff with the support of CSC Health Services staff. This report presents rates of HIV, Hepatitis B and C, and STDs in federal inmates.

Results

HIV

In Canada, HIV prevalence in the general population in 1999 was estimated at 0.1%.⁴ In comparison, the prevalence of reported HIV-positive inmates in CSC facilities at year-end 2001 was 223 (1.8%), up from 214 inmate cases (1.7%) in 2000 (Table 1).

During 2001, 16 inmates were newly identified within CSC with HIV infection, compared to 45 new reported HIV infections in 2000. Infections discovered at admission accounted for 69% of all newly reported HIV cases in 2001 and for

Table 1

HIV in inmates of Canadian federal penitentiaries,¹ 2000-2001		
	2001 n (%)	2000 n (%)
HIV antibody screening uptake		
New admissions	1,606 (34.8)	1,768 (38.1)
General population	2,412 (19.0)	2,770 (21.7)
Total	4,018	4,538
New reported HIV cases		
New admissions	11 (0.2)	24 (0.5)
General population	5 (0.04)	21 (0.2)
Total	16	45
Gender		
Male	15 (93.8)	43 (95.6)
Female	1 (6.2)	2 (4.4)
Total	16	45
Total reported HIV cases²		
Male	210 (1.7)	201 (1.6)
Female	13 (4.7)	13 (5.0)
Total	223 (1.8)	214 (1.7)

¹ 2001 inmate population: 12,755 general population inmates (12,418 males, 277 females [excluding females in institutions also housing male inmates]), 4,643 new admissions
2000, inmate population: 12,681 general population inmates (12,361 males, 262 females [excluding females in institutions also housing male inmates]), 4,618 new admissions

² Prevalence of reported cases as of year-end

53% of cases in 2000. A higher screening rate among new admissions may have allowed for better case-finding in this group compared to general population inmates.

Higher rates of screening among women offenders³ also likely accounts for increased opportunities for identifying prevalent infections compared to men. In 2001, the prevalence of reported HIV cases was 4.7% among women offenders and 1.7% among males. Compared to the previous year, rates were lower for women (5.0% in 2000) but were comparable for men (1.6%).

Hepatitis C

The prevalence of reported HCV infection in federal inmates increased from 2,542 (20.1%) reported cases in 2000 to 2,993 (23.6%) cases in 2001 (Table 2). In comparison, the rate of HCV infection in the general Canadian population (0.8%) was several fold lower than in federal inmates.⁵

During 2001, 562 new cases of HCV infection were identified in CSC facilities, compared to 533 new cases in 2000. In contrast to results for

HIV infection, new cases of HCV infection were more frequently identified among general population inmates (65% in 2001, 54% in 2000) than in new admissions. The reasons for this finding could be that it is only in the last three years that recognition of this disease and availability of testing have been promoted within CSC.

Table 2

Hepatitis C in inmates of Canadian federal penitentiaries¹, 2000-2001		
	2001 n (%)	2000 n (%)
HCV antibody screening uptake		
New admissions	1,908 (41.1)	1,583 (18.1)
General population	2,512 (19.7)	2,151 (17.0)
Total	4,420	3,734
New reported Hepatitis C cases		
New admissions	195 (4.2)	244 (5.3)
General population	367 (2.9)	289 (2.3)
Total	562	533
Gender		
Male	528 (94.0)	500 (93.8)
Female	34 (6.0)	33 (6.2)
Total	562	533
Total reported Hepatitis C cases²		
Male	2,879 (23.2)	2,431 (19.7)
Female	114 (41.2)	111 (42.4)
Total	2,993 (23.6)	2,542 (20.1)

¹ 2001 inmate population: 12,755 general population inmates (12,418 males, 277 females [excluding females in institutions also housing male inmates]), 4,643 new admissions
2000, inmate population: 12,681 general population inmates (12,361 males, 262 females [excluding females in institutions also housing male inmates]), 4,618 new admissions

² Prevalence of reported cases as of year-end

However, as with HIV infection, women were more likely than men to test positive for HCV. At year-end 2001, 41.2% of women offenders and 23.2% of male inmates were reported to be living with Hepatitis C. The rate of infection was lower for women (42.4%) and higher for men (23.2%) than in 2000.

Hepatitis B and Sexually Transmitted Diseases

The preponderance of HIV and hepatitis C among prison inmates often overshadows the burden of illness associated with less commonly reported communicable diseases such as STDs. In the community as well as in prison, hepatitis B and other sexually transmitted infections are more often identified symptomatically rather than through voluntary screening.

In 2000 and 2001, the number of reported infections of hepatitis B in CSC inmates was 13 and 43 cases, respectively. This corresponds to 0.1% of the inmate population in 2000 and 0.3% in 2001. In comparison, the rate in the general Canadian population has been estimated to be between 0.5%-1.0% in 2000.⁵

In 2001, 23 cases of genital chlamydia (0.18% of inmate population) were reported by CSC facilities, compared to 21 cases (0.17%) in 2000. Gonorrhea cases also increased slightly during this interval from 11 cases in 2000 (0.09%) to 13 cases (0.10%) in 2001. During 2001, rates of Chlamydia and gonorrhea in the general Canadian population were estimated at 0.15% and 0.02%, respectively.⁶

Discussion

Surveillance data provide merely one small part of the picture with respect to infectious diseases and must be complemented with targeted research studies to elucidate information not captured through routine surveillance. Data compiled by the CSC-IDSS during 2000 and 2001 corroborate results found by Canadian prison researchers on the distribution and rates of HIV and hepatitis C in inmates.⁷ Studies indicate that a history of injection drug use is the most common risk factor for infection with HIV and HCV among federal inmates in Canada.⁸ More specifically, the sharing of unsafe injection equipment among inmates who inject illicit drugs is conducive to the transmission of bloodborne viruses.

This fact points to the increasingly important challenge for correctional health care workers to find creative and effective ways to reduce the transmission of infectious diseases between infected and non-infected. Interventions for reducing the high burden of disease may require implementation in the context of harm reduction strategies, while complementing traditional means of health promotion through inmate education. In addition to confidential voluntary testing, CSC has implemented several initiatives aimed at preventing the transmission of infectious diseases and reducing the harms associated with risky behaviours. These include 1) the provision of educational materials and programs for offenders and staff, 2) the availability of condoms, dental dams, water-based lubricants and bleach in all institutions, 3) the promotion of immunization for Hepatitis A and B, and 4) the provision of a methadone

maintenance program for opioid-addicted inmates. Specific studies are needed to better quantify the risk of infection within Corrections in order to improve the interventions.

The early identification of HIV, hepatitis B and C, and STDs in inmates will help reduce morbidity and lower treatment costs associated with disease sequelae. Given the common route of transmission shared by hepatitis B, Chlamydia and gonorrhea with HIV and hepatitis C (through blood and sexual transmission),⁹ the role of some STDs in facilitating the transmission of HIV,¹⁰ and the increased impact on health of co-infections, it is undoubtedly critical to address the prevention of hepatitis B and STD transmission. While CSC offers immunization for Hepatitis B to all inmates, no data are collected on the number of inmates who receive the vaccine. Active screening for STD, can facilitate their control. Expanding screening uptake for inmates, especially upon admission, is supported by the success of early case-finding opportunities indicated by data in this report.

The findings in this article must be interpreted with caution. A limitation of the aggregate surveillance data lies in the fact that screening uptake rates do not differentiate individuals who undergo multiple testing. Thus, actual rates of disease, which are based on the number of positive test results, may be higher than presented here. Furthermore, reported disease rates reflect only those who come forward for testing. The asymptomatic nature of many infectious diseases further underestimates the true prevalence of disease in the inmate population.

Prevalence data reported on a yearly basis cannot indicate if changes in rates be attributed solely to transmission within the Institutions. A significant percentage of inmates come into the system already infected. In coming years, health surveillance at CSC will strive to take advantage of more rigorous methodologies in disease monitoring to allow for better characterization of reported infections. Moreover, CSC will continually re-evaluate strategies to find effective methods for disease prevention and control among federal inmates. ■

⁵ In this article, women offenders refer to female inmates housed in exclusively CSC women's institutions and do not include federal female inmates in provincial facilities and in federal institutions housing both male and female offenders.

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