FOCUS ON FEDERAL WOMEN OFFENDERS: HIGH RISK, HIGH NEEDS, HIGH PROFILE

Eighteen years have passed since the seminal document on federal women’s corrections in Canada, Creating Choices, was published. In that time, six multi-level security institutions for federal women offenders (FWOs) have been constructed, including an Aboriginal healing lodge.

A Program Strategy for Women Offenders has been developed which includes substance abuse, violence prevention, sexual offending, mental health, education, employment, and social programs, all of which are based on the guiding principles of Creating Choices. In addition, there now exists a Mental Health Strategy for Women Offenders. An infectious disease strategy for women offenders is currently in development (see The Social Determinants of Health and Women Offenders’ Vulnerability to Infection).

These and other positive developments for FWOs have resulted in CSC being recognized as a “world leader in women’s corrections.”

This issue of Public Health in Federal Corrections (PHFC) focuses on FWOs in the context of public health. Women offenders have many unique characteristics. One in three FWOs is Aboriginal. Most FWOs have a life history of abuse, leading them on a trajectory of poverty, mental health problems, sex work, drug abuse and addiction. FWOs have higher rates of infectious diseases and related health sequelae. Issues of low self-esteem, powerlessness, apathy, shame and stigma abound. Combined, the result is a population of women with poor overall health, at high risk for infection (or re-infection), and with high needs.

Front Gate, Nova Institution for Women, Truro, N.S.
Rear Area of Medium Security Houses Nova Institution for Women, Truro, N.S.

THE SOCIAL DETERMINANTS OF HEALTH AND WOMEN OFFENDERS' VULNERABILITY TO INFECTION

By Mary Beth Pongrac, Project Officer - HIV/AIDS
Public Health Branch, Health Services Sector

The prevalence of HIV, hepatitis C virus (HCV), and sexually transmitted infections (STIs) among Federal Women Offenders (FWOs) is high (see “Infectious Disease Surveillance Update”). Applying the social determinants of health to the life histories of women offenders can help us understand why.

The social determinants of health are as follows:

- Income and Social Status
- Education and Literacy
- Employment / Working Conditions
- Social Environments
- Social Support Networks
- Physical Environments
- Personal Health Practices and Coping Skills

- Biology and Genetic Endowment (while not social determinants of health, these nonetheless influence health)
- Health Services
- Gender
- Culture
- Healthy Child Development

The following conceptual framework links the social determinants of health to risk behaviours:

Life histories of physical and sexual abuse, unemployment, poverty, mental health problems, etc., have a negative impact on self-perception and capacity for independence, which, in turn, result in risk behaviours, rendering women vulnerable to infection.
FWOs tend to have low rates of education completion and employment. From intake assessment data obtained between April 2007 and April 2008, 79% of women offenders did not have a high school diploma at admission to CSC; and 78% reporting being unemployed at the time of their arrest.

In a 1990 survey of FWOs at the Prison for Women, 82% reported sexual or physical abuse during their lives. From the intake assessment data previously mentioned, 63% of women offenders reported spousal abuse.

Between April 2007 and April 2008, 21% of women offenders were identified at intake as having mental health problems. Other CSC research indicates that 29% of women offenders have been hospitalized for psychiatric reasons at some point in their lives. Upon admission between April 2007 and April 2008, 72% of women offenders were identified as having a drug or alcohol problem.

The Canadian AIDS Society states:

The dual problem of injection drug use and HIV infection affects the most socially and economically disadvantaged persons in our society: the inner city poor, Aboriginal peoples, and women.

If one happens to be all three (poor, Aboriginal and a woman), as many FWOs are, the odds are stacked against them. While Aboriginal peoples constitute less than 3% of Canada’s population, over 30% of FWOs are Aboriginal.

Biologically, due to the structure of their reproductive organs, women are more susceptible than men to HIV and other STIs. Recent research suggests that uncircumcised men are just as, or more susceptible to infection than women due to the relatively large area of mucous membrane under the foreskin. Nevertheless, the odds of a woman contracting HIV from a male partner during sex, than vice versa, range from twice as likely to 20 times more likely. In addition, some STIs, which can increase the risk of HIV infection, are symptomless in women, meaning they may go undiagnosed and therefore untreated.

CSC is drafting an Infectious Disease Strategy for Women Offenders. Recognizing the impact of the social determinants of health on FWOs, the guiding principle for the strategy is that all FWOs must be offered gender and culturally appropriate infectious disease prevention, care, treatment and support. This means that the life histories of FWOs must be considered in order to understand their vulnerability to infection; decisions around risk behaviours; utilization of harm reduction measures; accessing health services; and testing/treatment uptake.

References
2 Performance Assurance Sector, CSC.
HEALTH SERVICES SECTOR UPDATE
By Benoit Lajeunesse, Student
Public Health Branch, Health Services Sector

The former Health Services Branch is now a Sector! This means that it has an Assistant Commissioner (AC) who is a member of CSC’s Executive Committee. In addition, there is an Executive Sub-committee on Health, which is chaired by the AC.

A new governance model has been developed, in which, along with the AC, there are four senior managers in place at NHQ and five Regional Directors.

Assistant Commissioner
• Leslie MacLean

Senior Managers (NHQ)
• Henry De Souza, Director General, Clinical Services;
• Corinne Hagerman, Director General, Mental Health;
• Ann Marie Hume, Director General, Public Health;
• Marian Harymann, Director General, Policy, Planning and Quality Improvement.

Regional Directors
• Debra Gaskell, Pacific Region;
• Heather Thompson, Prairie Region;
• Robert Browne, Ontario Region;
• Chantal Fontaine, Quebec Region; and
• Marc Cormier, Atlantic Region.

The Priorities of the Health Services Sector for 2008/09 - 2010/11 are:
• Improving the quality and consistency of essential health service delivery
• Informing decision-making by collecting and analyzing key health information.
• Improving the capacity to address the health needs of Aboriginal offenders, women offenders, and offenders with mental health disorders.
• Building a sustainable Health Services’ workforce in a healthy workplace.
• Strengthening management practices with a focus on accountability, efficiency and effectiveness.

Currently the Director Generals at NHQ are busy staffing positions and creating the structures required to implement, support, and evaluate their respective mandates.

Within the Public Health Branch, Ann Marie Hume was appointed as the Director General in November 2007. During her 13 year career with the federal public service, she has worked at the senior level in several departments and agencies, most notably as the Director, Strategic Policy and Planning with the Public Health Agency of Canada. She has also held senior positions with Health Canada and the Privy Council Office and other departments in Ottawa and other regions.

Health Services’ Sector Vision
Improved offender health that contributes to the safety of Canadians.

Health Services’ Sector Mission
We provide offenders with efficient, effective health services that:
- Encourage individual responsibility;
- Promote healthy reintegration; and
- Contribute to safe communities
HUMAN PAPILLOMAVIRUS VACCINE
By Benoit Lajeunesse, Student
Public Health Branch, Health Services Sector

Human Papillomavirus (HPV) is the most common sexually transmitted infection. It is estimated that 75% of sexually active adults will have an HPV infection in their lifetime. Various Canadian studies conducted among women have reported that the overall prevalence rate for all types of HPV ranges between 10.8% and 29.0%. Prevalence rates are highest among adolescents and young adults under the age of 25.

There are over 100 types of HPV, approximately 40 of which can infect the genital tract. HPV is the source of almost all cases of cervical cancer and most cases of ano-genital warts. Types 16 and 18 are the types most commonly associated with cervical cancer. The virus genome inserts itself into the epithelial cells of the cervix, where it may persist for years and ultimately progress to cancer. Women whose immune system is weakened, including women with HIV infection, have a higher risk of developing cancer. Pap testing provides a means of detecting changes in the cervical epithelium before these changes progress to carcinoma. The virus is transmitted through direct epithelial contact, usually during sexual intercourse.

The risk of contracting HPV increases with the number of sexual partners. Women offenders present a large number of risk factors that are linked to the progression of HPV infection to cervical cancer. HIV/AIDS, a history of STIs, smoking and aging are associated with immune system suppression and a greater risk of developing cervical cancer. A low level of education, poor socio-economic conditions, living in a remote community, as well as Aboriginal, African-American and Hispanic ancestry are risk factors that have been associated with inadequate or highly sporadic Pap screening.

Gardasil™, a new vaccine approved in Canada, provides immunity against four types of HPV, including types 16 and 18, which are responsible for 70% of all cervical cancers, and types 6 and 11, which are responsible for 90% of all ano-genital warts. The vaccine protects against these HPV types but has no effect on existing infections.

The National Advisory Committee on Immunization (NACI) has recommended that all girls and women between the ages of 9 and 26 be vaccinated. NACI has indicated that even women who are sexually active can benefit from the vaccine. It is unlikely that women in this age group would already be infected by all four types of HPV for which Gardasil™ confers immunity. In clinical trials for the vaccine, only 0.1% of women presented a positive result for all four types of HPV.

The CSC guidelines on STIs (revised in April 2007) are based on the NACI recommendations regarding HPV vaccination. The guidelines recommend that women offenders between the ages of 14 and 26 be vaccinated, even if they are already sexually active, have already had an abnormal Pap test, including cervical cancer, or have had genital warts. It is also recommended that persons whose immune system is suppressed be vaccinated, even if their immune response is likely to be less than optimal.

At present, vaccination of pregnant women, women over the age of 26, and men is not recommended. CSC has started administering the vaccine in women’s institutions.

References
A TYPICAL DAY IN HEALTH CARE AT THE EDMONTON INSTITUTION FOR WOMEN
By Kathy McManus, Nurse, EIFW

The Edmonton Institution for Women (EIFW) is a multi-level security federal women’s institution that houses approximately 130 inmates. The facility is divided into 10 "houses" that are home to 11 inmates each. The women in the houses are responsible for their own cleaning, cooking, etc. EIFW also has a maximum security unit that has 3 pods, each housing 5 inmates, and a 4-cell segregation wing.

A typical day starts at 7:30 a.m. with a “med” movement to health care. In the last year, EIFW has gone to a bubble pack system for most of the inmate medications. The inmate signs a contract stating that they will keep their medications secure and will ensure that they use their own medications appropriately. Once a week, the inmates come to health care during "bubble pack movement", where they return their empty bubble packs and pick up their medications for the next week. Any breach of this contract results in removal of their privilege to self-medicate.

Following the morning medication movement, inmates can come to health care to be seen for sick passes. Sick passes are given out for 1 day at a time (unless the inmate has had surgery and will require a longer recuperation period), so an inmate will have to come back each day even if the symptoms are the same.

Inmates are expected to attend school or work throughout the day. They come to health care at 4:45 p.m. for evening medication movement.

We have various physicians that come in on a weekly basis: methadone doctor, psychiatrist, general practitioner, dentist, an HIV specialist (every 3 months) and an infectious disease doctor (monthly). Health care emergencies are dealt with immediately. For non-emergencies, the inmates put in a written request to access services. An assessment nursing clinic is held every Tuesday to triage the complaints and schedule appropriate follow-up appointments. Health care is staffed from 7:00 a.m. to 7:00 p.m. daily. Any emergencies after hours are sent to an outside hospital.

We also provide services to pregnant inmates. We have a full time mental health nurse who is involved in various mental health programs. We have 15 women on the methadone program and numerous women undergoing Hepatitis C, HIV or Tuberculosis treatment.

HEALTH PROMOTION AT FRASER VALLEY INSTITUTION
By Michelle Smith, Nurse - Team Leader, Fraser Valley Institution

Her name is Lena; she has a history of self harm, substance abuse and assault. I greet her on arrival to health care for an admission assessment. Lena shares her story with me about the sexual and physical abuse she has experienced in her life. She left home at the age of 14 to live on the street, turning to prostitution and drugs to survive and forget. Lena candidly answers my many questions and tells me she has hepatitis C and herpes, but has not seen a doctor or a nurse for a year. Lena trustingly holds out her arm to receive a Mantoux Test. I see the many scars and old track marks on her forearm. I find a small spot on her arm that is not scarred and administer the injection of tuberculin. Lena apologizes that it was difficult for me to give her the test. Lena has given me a glimpse of the socio-environmental/historical context that has shaped who she is today. I think how best to respond to her to promote health and healing. I will use the nursing process to assess, plan, implement and evaluate actions to take to address Lena’s health issues, but for health promotion to occur it is more than doing, it is a way of being that focuses on discovery and enhancement of Lena’s capacity for health and healing. What is meaningful and significant to her for health and healing? This is the beginning of the health promotion process to identify with Lena the adversities that are constraining her from having the power, choice and ability to realize her potential.

HIV/AIDS AND WOMEN IN CANADA
By Jacqueline Arthur, A/Manager HIV/AIDS Policy, Coordination and Programs Division, Centre for Communicable Diseases and Infection Control, Public Health Agency of Canada

Under the Federal Initiative to Address HIV/AIDS in Canada (Federal Initiative), the Government of Canada is committed to developing, in concert with those affected or at risk, population-specific approaches to address the HIV/AIDS epidemic.

Women account for a growing proportion of HIV positive test reports. According to the Public Health Agency of Canada (PHAC), a total of 1,866 AIDS cases and 9,569 HIV infections were reported in adult women up to the end of 2006. In 2006, women accounted for approximately 28% of all HIV positive test reports and of those, 71.2% were young women between the ages of 15 and 39 years. Among women (15 years and older), the primary exposure categories associated with newly diagnosed HIV infection are heterosexual contact and intravenous drug use (IDU)1.

Through its community programming, including the AIDS Community Action Program (ACAP), PHAC provides support for community-based organizations to deliver prevention, care and support services to all people living with HIV/AIDS and those vulnerable to HIV infection, including prison inmates.

PHAC is also developing population-specific HIV/AIDS status reports for key populations including women and prison inmates to guide future policy, program and research priorities. Each report will include up-to-date information on the population’s demographic profile, on the state of the epidemic, on the factors that increase vulnerability to HIV/AIDS, on currently funded research, on the lived experience of those affected by HIV/AIDS and will conclude with an analysis of the response.

As a partner in the Federal Initiative, the Correctional Service of Canada (CSC) is working with PHAC in the development of the status reports as well as engaging with other federal departments, agencies and non-governmental organizations in addressing the need for HIV prevention, diagnosis, care, treatment and support services.

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FACTORS ASSOCIATED WITH BBSTI AMONG NEW ADMISSIONS TO FEDERAL PENITENTIARIES IN CANADA
By Jonathan Smith, Epidemiologist & Benoit Lajeunesse, Student
Public Health Branch, Health Services Sector

Enhanced screening forms for bloodborne and sexually transmitted infections (BBSTI), including hepatitis C virus (HCV) and human immunodeficiency virus (HIV) were piloted in CSC in 2004 and implemented system-wide in 2005. These forms facilitate a risk-based screening approach while providing basic surveillance data in order to inform and enhance health education / promotion and prevention and control activities at CSC. Screening / testing, surveillance, analysis, and dissemination of infectious disease data among inmates are mandated under Commissioner’s Directive 82.

Tools have now been developed in order for these data to be tabulated, analyzed, and reported. The population in this analysis consisted of 3,518 newly admitted inmates (3,314 males, 156 females, and 48 unknown) in 2004 (pilot data) or 2005 who participated in infectious disease screening, and whose data had been entered by February 2008. The data used in this analysis were extracted from the Web-enabled Infectious Disease Surveillance System (Web-IDSS), an enhanced surveillance system for infectious diseases at CSC. The objective of the analysis presented in this report was to validate the tools as they were built; thus although the analysis describes the estimated prevalence of risk factors for, prevalence of, and associations between risks and infection for both HIV and HCV (“odds ratios”), neither prevalence nor the estimated association have been stratified by gender or calendar year. In addition, since the pilot data are included in the analysis, these findings may not be representative of all new admissions across the country. More detailed analysis of the data for 2005 and 2006 are currently being prepared for publication.

Results: Risk Factors
The self-reported prevalence of risk factors for HIV and HCV are shown in Table 1. With a few exceptions, women offenders tend to report a higher prevalence of risks compared to male offenders.

<table>
<thead>
<tr>
<th>Risk Factors</th>
<th>Men, % (n)</th>
<th>Women, % (n)</th>
<th>p value</th>
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</thead>
<tbody>
<tr>
<td>Non-Sexual Risk Factors</td>
<td></td>
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<td></td>
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<tr>
<td>Injection drug use (IDU)</td>
<td>23.4 (774)</td>
<td>46.2 (72)</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Snorting drugs</td>
<td>46.2 (1531)</td>
<td>52.6 (82)</td>
<td>0.22</td>
</tr>
<tr>
<td>Tattooing</td>
<td>58.2 (1930)</td>
<td>59.6 (93)</td>
<td>0.61</td>
</tr>
<tr>
<td>Body piercing</td>
<td>28.8 (986)</td>
<td>49.4 (77)</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Slashing/fighting</td>
<td>13.2 (439)</td>
<td>16.7 (26)</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Shared residence with HCV+ person</td>
<td>10.2 (339)</td>
<td>13.5 (21)</td>
<td>0.029</td>
</tr>
<tr>
<td>Sexual Risk Factors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sex with IDU</td>
<td>14.4 (477)</td>
<td>33.3 (52)</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Sex trade worker (STW)</td>
<td>3.4 (114)</td>
<td>21.8 (34)</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Client of sex trade worker</td>
<td>14.2 (469)</td>
<td>6.4 (10)</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Forced sex</td>
<td>3.8 (125)</td>
<td>21.2 (33)</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Men having sex with men</td>
<td>2.5 (82)</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Unprotected casual sex (heterosexual)</td>
<td>10.9 (361)</td>
<td>12.2 (19)</td>
<td>0.62</td>
</tr>
</tbody>
</table>

† - 2004 Pilot data, ‡ - Partial data for 2005
Results- Prevalence

Based on the BBSTI screening forms submitted to NHQ, the overall prevalence of HIV among new admissions was 0.8% among males and 1.9% among females. The prevalence of HCV among new admissions was 9% among males and 30.8% among female offenders. Of those HIV positive, 50% were also HCV positive; of those HCV positive, 5% were also HIV positive.

The prevalence of HIV and HCV according to risk are shown in Figures 1 (HIV) and Figure 2 (HCV). HIV was most prevalent among injection drug users (IDU) and those having sex with an IDU, sex trade workers (STW), those reporting forced sex (sex forced on you when you didn’t want it), and males having sex with males (MSM) (see Figure 1).

Figure 1: Prevalence of HIV by Risk among New Admissions, 2004† - 2005‡.

Risk Factor Association

The strength of the association between risk factors and prevalence is measured by the “odds ratio” (see Glossary). The risk factors most strongly associated with HIV were IDU (OR 4.0), sex with IDU (OR 4.4), forced sex (OR 5.0), and men having sex with men (OR 4.9). The risk factors most strongly associated with HCV included IDU (OR 16.2), sex with IDU (OR 5.2), history of being a sex trade worker (OR 3.9), forced sex (OR 3.2), and slashing/fighting with blood exchange (OR 2.9). IDU had a strong association with HIV and HCV infections and a high number of inmates reported having a history of IDU (23.4% among men and 46.2% among women).
GLOSSARY

Bias: Arising as a result of study design or sampling, bias may lead to over or under estimation in the measurement of either prevalence or association.

Confidence Interval: Parametrically driven measures of the upper and lower parameter estimates; for example, a 95% confidence interval is the expected range for a given parameter in 19/20 analyses, given the same sampling frame.

Confounding: The statistical disturbance of a measure of association between one potential risk factor and an infection or disease outcome, due to a correlation (or association) with another risk factor.

Odds Ratio: Based on a cross-sectional or case-control study design, the odds ratio approximates the relative risk under certain conditions. The odds ratio is technically the conditional probability of being exposed to a risk factor given that the case has the disease or infection.

Prevalence: A measure of the proportion of a population in time and space with an infection or disease; point-prevalence is calculated at one instance in time, while a period-prevalence counts the cases of infection or disease over time.

Relative Risk: The probability of acquiring an infection or disease among those exposed to a risk factor, relative to the probability of acquiring an infection or disease among those not exposed.

Risk Factor: A condition or behaviour that increases the risk of acquiring an infection or developing a disease.

Table 2: Association between Risk History and HIV/HCV Infection among New Admissions, 2004†-2005‡.

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>HIV</th>
<th></th>
<th>HCV</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>OR (95% CI)</td>
<td>p-value</td>
<td>OR (95% CI)</td>
<td>p-value</td>
</tr>
<tr>
<td><strong>Parenteral Risk Factors</strong></td>
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<tr>
<td>Injection Drug Use (IDU)</td>
<td>4.0 (2.1, 7.7)</td>
<td>&lt;0.001</td>
<td>16.2 (13.0, 20.1)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Snorting Drugs</td>
<td>1.3 (0.7, 2.6)</td>
<td>0.45</td>
<td>2.3 (1.9, 2.9)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Tattooing</td>
<td>0.8 (0.4, 1.6)</td>
<td>0.56</td>
<td>1.8 (1.4, 2.3)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Body Piercing</td>
<td>0.7 (0.3, 1.5)</td>
<td>0.34</td>
<td>1.0 (0.8, 1.3)</td>
<td>0.78</td>
</tr>
<tr>
<td>Slashing / fighting</td>
<td>1.2 (0.5, 3.1)</td>
<td>0.72</td>
<td>2.9 (2.3, 3.7)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Shared residence with HCV+ person</td>
<td>0.3 (0.1, 1.8)</td>
<td>0.18</td>
<td>0.9 (0.6, 1.3)</td>
<td>0.50</td>
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<tr>
<td><strong>Sexual Risk Factor</strong></td>
<td></td>
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<tr>
<td>Sex with IDU</td>
<td>4.4 (2.3, 8.4)</td>
<td>&lt;0.001</td>
<td>5.2 (4.2, 6.4)</td>
<td>&lt;0.001</td>
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<tr>
<td>STW‡</td>
<td>3.1 (1.2, 5.6)</td>
<td>0.03</td>
<td>3.9 (2.7, 5.5)</td>
<td>&lt;0.001</td>
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<tr>
<td>Client of STW‡</td>
<td>1.8 (0.8, 4.0)</td>
<td>0.19</td>
<td>1.6 (1.2, 2.1)</td>
<td>&lt;0.001</td>
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<td>Forced Sex</td>
<td>5.0 (2.2, 11.2)</td>
<td>&lt;0.001</td>
<td>3.2 (2.2, 4.6)</td>
<td>&lt;0.001</td>
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<tr>
<td>MSM‡</td>
<td>4.9 (1.6, 14.7)</td>
<td>0.01</td>
<td>0.7 (0.3, 1.6)</td>
<td>0.35</td>
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<td>Unprotected casual sex with male</td>
<td>5.1 (0.8, 31.6)</td>
<td>0.08</td>
<td>4.9 (2.2, 10.6)</td>
<td>&lt;0.001</td>
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<td>Unprotected casual sex with female</td>
<td>0.9 (0.3, 2.9)</td>
<td>0.83</td>
<td>1.4 (1.0, 1.9)</td>
<td>0.05</td>
</tr>
</tbody>
</table>

† - 2004 Pilot data
‡ - Partial data for 2005
1. OR: odds ratio; CI: confidence interval.
2. STW: Sex trade worker
3. MSM: Men having sex with men

Discussion

The analysis indicated a lower prevalence of both HIV and HCV than that reported by CSC in 2004. This finding indicates that for those new admissions with a previous diagnosis of HIV or HCV infection, surveillance forms were not completed. While confirmatory testing is part of the screening protocol and is represented in the BBSTI data, it is clear...
that not all positive cases are represented in the BBSTI data. However, while this will affect the estimate of prevalence, it shouldn’t affect the estimates of association unless there is a differential bias for risk between those who know their status and those who do not.

Several important associations between risk and infection were identified in the demonstration analysis reported here. The association between IDU and both HIV and HCV is well documented and is confirmed in these data. The prevalence of IDU is consistent with results reported in other Canadian jurisdictions among incarcerated populations. The finding that half of all females have a history of IDU indicates the elevated risk among women offenders and the importance of infectious disease screening in this population.

The finding that slashing / fighting with blood exchange is predictive of infection with HCV is important. First, it provides a “red flag” for infectious disease nurses, in offering HCV screening to those with unknown or previous negative results. Second, although this simple cross-sectional association does not infer causation, the significance of this risk as a pathway for transmission among this at-risk population should be noted.

Several sexual risk factors, including casual unprotected sex with males and females, were associated with HCV infection in this population. Sexual transmission of HCV is routinely considered ineffective, and the findings may be simply confounded by other risk factors, such as IDU in this population. However, they remain a useful source of information in determining the probability of infection with both HIV and HCV and are important screening questions for new admissions.

The implications around the association between forced sex and HIV and HCV infection status must be interpreted with caution. The question “ever having sex forced on you when you didn’t want it” is highlighted as an important risk factor in determining probability of infection and offering testing in this population. However, it may be that this question itself is indicative of a personal history of abuse, with an associated life-trajectory associated with other risks, including sex trade work and drug abuse.

This demonstration analysis is part of a public health approach to surveillance, and disseminates the results of analyses to the field and to other stakeholders. While the analysis presented here, the first to use the screening data from the enhanced BBSTI forms, suffers from issues of generalizability and bias owing to the representativeness of these early data, it is important to note that analyses of this nature will allow an evidence-based approach to public health policy and programming in CSC.

References
2. CSC; CD 821 Management of Infectious Diseases, CSC, 2004.
A higher proportion of federal women offenders report risk factors for bloodborne and sexually transmitted infections compared to their male counterparts (see previous article). Data reported via the aggregate CSC Infectious Disease Surveillance System (IDSS) indicate that women consistently report higher prevalence rates of HIV, HCV, and with rare exception, bacterial STI.

Figure 1: Year-end HIV Prevalence by Gender CSC 2000-2006

Figure 1 above shows that the prevalence of HIV for men remained relatively stable since 2000, while the prevalence of HIV among female offenders has been more variable. The total prevalence is closer to the male’s prevalence as male offenders constitute most of the federal offender population.

Figure 2 (next page) shows that among women offenders, the year-end prevalence of HCV decreased slightly from 2000 to 2003, increased between 2003 and 2005, and decreased to 36% in 2006. The rate among men has been generally increasing since 2000 (from 19.7% to 27.3% in 2006).
Figure 2: Year-end HCV Prevalence by Gender, CSC 2000-2006†

Table 1: Bacterial STI Case Rates by Gender, CSC 2000-2006†

<table>
<thead>
<tr>
<th></th>
<th>2000</th>
<th>2001</th>
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<tr>
<td>Chlamydia</td>
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<td>Females</td>
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<td>1.31%</td>
<td>0.89%</td>
<td>1.23%</td>
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</tr>
<tr>
<td>Males</td>
<td>0.16%</td>
<td>0.17%</td>
<td>0.41%</td>
<td>0.46%</td>
<td>0.38%</td>
<td>0.74%</td>
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</tr>
<tr>
<td>Gonorrhoea</td>
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<tr>
<td>Females</td>
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<tr>
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<tr>
<td>Syphilis</td>
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</tr>
<tr>
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<td>0.00%</td>
<td>0.03%</td>
<td>0.03%</td>
<td>0.07%</td>
<td>0.05%</td>
<td>0.11%</td>
</tr>
<tr>
<td>Other STI2</td>
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</tr>
<tr>
<td>Females</td>
<td>12.74%</td>
<td>7.53%</td>
<td>2.61%</td>
<td>4.14%</td>
<td>5.41%</td>
<td>4.13%</td>
<td>5.84%</td>
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<tr>
<td>Males</td>
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<td>0.08%</td>
<td>0.38%</td>
<td>0.60%</td>
<td>0.54%</td>
<td>0.42%</td>
<td>0.27%</td>
</tr>
</tbody>
</table>

1 – Case Rates are calculated by dividing the total number of cases reported in the calendar year by the total number of inmates in CSC over the calendar year (number on Jan 1 plus new admissions)

2 – Other STI include herpes, genital warts, non-specific urethritis, and bacterial vaginosis.

The case rates of chlamydia, gonorrhoea, and syphilis have increased from their 2000 level in both male and female offenders. Syphilis rates are at their highest in both groups. Cases of all STIs, and especially "other STIs", remain high among female offenders compared to their male counterparts.

† Data for 2005-2006 is preliminary, unpublished and subject to change.

DeGroot and Uvin argue that incarcerated women have higher rates of HIV infection than incarcerated men because the activities for which they are incarcerated put them at risk for infection: injection drug use; sexual partners of injection drug users; sex work; forced sex; and trading sex for housing and food.

Citing several studies, the authors point to poverty; lack of marketable job skills; mental health problems; and biological factors (vulnerability to infection based on structure of the reproductive organs) as contributing to HIV infection in women. They also demonstrate the link between high rates of sexually transmitted infections and gynaecologic infections among incarcerated women and risk of HIV infection.

The authors recommend that testing be readily available and offered to incarcerated women; and suggest a multi-faceted approach that includes clinical medical services, physical and sexual abuse recovery programs, drug treatment, mental health services, vocational training, and comprehensive discharge planning.

“For women especially, being subjected to harm and violence may begin or hasten a descent into the abyss of criminal justice networks, family disruption, certain types of infectious disease and poor health – a cycle that is not taken into account by the judiciary when women enter the system.”


Braithwaite et al argue that because incarcerated women are “invisible”, little has been done to enhance their health status. Historically, women have been underrepresented at all levels of the criminal justice system and this has resulted in a system created by men for men; one that continues to neglect the diverse needs of women, even though there has been a large increase in the number of female inmates. They also point out that many incarcerated women lack health care prior to incarceration and that a large proportion of incarcerated women are survivors of physical and sexual abuse, putting them at higher risk of infection with HIV, hepatitis C and human papillomavirus.

“Incarceration provides a critical opportunity for the education, diagnosis, and medical care of HIV-infected women and high-risk seronegative women, as well as a critically important public health opportunity to reduce the spread of HIV.”