Prisons and Public Health: ~~REconcilingparadox~~[title tba]

"Disease is not just going to stay in prison. We are all going home. We are going out to our families. It affects society."

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Hepatitis C virus (HCV) is increasingly a serious health issue for HIV-infected individuals in the developed world, where more than 30% of HIV-positive individuals are estimated to be infected with HCV (1). HIV/HCV co-infection accelerates the progression to cirrhosis and its many complications if untreated. (2). Unfortunately, treatment of HCV in the setting of HIV is also associated with lower response rates and complicated by drug interactions and toxicity (3). In this issue of *Open Medicine*, Rourke et al (4) present the findings of their research on the social determinants of health associated with HIV/HCV co-infection. In this cohort study, co-infected individuals were more likely to report illicit drug use, a history of homelessness and a history of incarceration than those infected with HIV alone.

These may not be novel findings with respect to HCV and HIV demography. Previous studies have identified injection drug use (IDU) as the major risk factor for acute HCV infection and a major risk factor for HIV infection (5,6). IDU - in combination with lack of unsterilized needles and rigs, previous incarceration, tattooing and high-risk sexual behaviours are responsible for most of the new HCV infections in prisons (7). Both HIV and HCV flourish in prisons: we already know that the estimates of HIV and HCV prevalence in Canadian prisons are ten and twenty times the estimated prevalence in the general Canadian population (8). Thus, all said, it isn't surprising that the most marginalized among those living with HIV are also the most likely to be co-infected with HCV.

The more challenging ethical dilemma arising from this work is two-fold. First, this study reinforces the fact that when we incarcerate an individual, we deprive them of their civil rights and knowingly – as this study and others demonstrate – place them at high risk of infection and disease. Second, inmates do not remain in jail indefinitely. After knowingly exposing inmates to potential infection, we then wittingly expose the population at large when prisoners return to the community. It is time to stop being polite about the facts: Above and beyond citing IDU and history of incarceration as risk factors for HIV and HCV infection, we need to be explicit that the experiences of being incarcerated itself is likely a *mode* of infection. A recent systematic review regarding tuberculosis (TB) rates in prisons highlighted that, internationally, there is a paucity of reliable data on the subject but that an estimated 8.5% of tuberculosis in the general population of high-income countries (mostly US data) is attributable to the exposure to TB in prisons (9).

Prisons very specifically function as a nidus [phrasing suggestions AMT? niduses sounds accurate but wacky…] of disease transmission.

Where do we assume responsibility in this regard? In 2008/2009, a total of 39,098 people were incarcerated in Canada with an incarceration rate of 117 for every 100,000 persons(10). Although lower than the U.S., Canada`s incarceration rate remains higher than most Western European countries (10). The current Canadian government has called for and implemented "tough on crime" laws which will see more people in prison for longer periods of time (11). We must examine the public health impact of intensifying incarceration legislation with within and beyond the prison walls. We need to amplify surveillance and treatment of infectious diseases in prison settings and implement strategies, such as prison-based needle and syringe programs (12) and addiction treatment (13), that improve and protect the health of prisoners and those working with them. And while confirming associations between marginalization and disease is important, we equally and urgently need to improve the health and health care of those most at risk with the hopes of reducing the burden of HIV and HCV in the community.

1. Rockstroh JK, Spengler U. HIV and hepatitis C virus co-infection. *Lancet Infect Dis.* 2004; 4: 437-444.

2. Tuma P, Medrano J, Resino S, Vispo E, Madejón A, Sánchez-Piedra C, Rivas P, Labarga P, Martín-Carbonero L, Barreiro P, Soriano V.
Incidence of liver cirrhosis in HIV-infected patients with chronic hepatitis B or C in the era of highly active antiretroviral therapy.
Antivir Ther. 2010;15(6):881-6.
PMID:

3. Matthews GV, Dore GJ. HIV and hepatitis C coinfection
J Gastroenterol Hepatol. 2008 Jul;23(7 Pt 1):1000-8. Review.

4. Rourke

5. Prevention and control of hepatitis C Guidelines and recommendations. *Can Commun Dis Rep.*1995;21(Suppl 2):1–18.

6. Alter MJ, Hadler SC, Judson FN, et al. Risk factors for acute non-A, non-B hepatitis in the United States and association with hepatitis C virus infection. *JAMA.* 1990;264:2231–5.

7. Public Health Agency of Canada. Hepatitis C Virus Transmission in the Prison/Inmate Population. *Canada Communicable Disease Report*. 2004; 30 http://www.phac-aspc.gc.ca/publicat/ccdr-rmtc/04vol30/dr3016c-eng.php Accessed on 11 November, 2010.

8. Canadian HIV/AIDS Legal Network. Under the Skin: A People's Case for Prison Needle and Syringe Programs. 2010. Available at http://www.aidslaw.ca/publications/interfaces/downloadFile.php?ref=1592 Accessed on 14 November, 2010.

9. Baussano I, Williams BG, Nunn P, Beggiato M, Fedeli U, et al. (2010) Tuberculosis Incidence in Prisons: A Systematic Review. PLoS Med 7(12): e1000381. doi:10.1371/journal.pmed.1000381

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10. Statistics Canada. Adult and Youth Correctional Services: Key Indicators (2008/2009 correction). < http://www.statcan.gc.ca/daily-quotidien/091208/dq091208a-eng.htm > Accessed on 11 November 2010

11. (http://www.cbc.ca/news/canada/montreal/story/2011/02/16/bloc-quebecois-supports-conservative-crime-bill-cp.html).

12. PHAC. Prison Needle Exchange: Review of the Evidence, Report for Correctional Service of Canada. April 2006.

13. Stark K, Bienzle U, Vonk R, et al. *History of syringe sharing in prison and risk of hepatitis B virus, hepatitis C virus, and human immunodeficiency virus infection among injecting drug users in Berlin*. Int J Epidemiol 1997;26(6):1359-1366.