

A Profile of People Who Inject Drugs in London, Ontario

Report on the Public Health Agency of Canada
I-Track Survey, Phase 3

Middlesex-London, 2012



November 2013

For information, please contact:

Laurie Young
Middlesex-London Health Unit
50 King St.
London, Ontario
N6A 5L7
phone: 519-663-5317 ext. 2346
fax: 519-663-8241
e-mail: laurie.young@mlhu.on.ca

© Copyright 2013
Middlesex-London Health Unit
50 King Street
London, Ontario
N6A 5L7

Cite reference as: Middlesex-London Health Unit (2013).
A profile of people who inject drugs in London, Ontario: Report on the Public Health Agency of Canada I-Track Survey, Phase 3, Middlesex-London, 2012.
London, Ontario.

Authors:
Hilary Caldarelli, BSc MPH
Alison Locker, BSc MSc
Bryna Warshawsky, MDCM MHSc CCFP FRCPC

In collaboration with the Regional HIV/AIDS Connection.

All rights reserved.

Table of Contents

I. Introduction	1
II. Methods	3
III. Results.....	4
1. Demographics.....	4
2. Drug Use Behaviours	6
3. Sexual Risk Behaviours	10
4. Hepatitis C and HIV Laboratory Testing Results and Testing Behaviours	11
5. Health Services Accessed	14
6. Knowledge of HIV-related Risk Behaviours and Transmission	15
IV. Summary and Conclusion	16
References.....	17
Figure 1 Selected drugs injected in the past six months, National and London I-Track samples	8
Figure 2 Selected non-injection drugs used in the past six months, London I-Track sample	8
Figure 3 Knowledge of HIV and HIV transmission, National and London I-Track samples.....	15
Table 1 Demographic characteristics, National and London I-Track samples	5
Table 2 Injection behaviours, National and London I-Track samples.....	7
Table 3 Injection frequency in the past month, London I-Track sample	9
Table 4 Injection risk behaviours, National and London I-Track samples.....	9
Table 5 Sexual risk behaviours, National and London I-Track samples.....	10
Table 6 HIV and Hepatitis C laboratory testing results, National and London I-Track samples	12
Table 7 HIV and Hepatitis C testing behaviours, care and treatment, National and London I-Track samples.....	13
Table 8 Table 8: Health services accessed in past 12 months, National and London I-Track samples ..	14

Acknowledgements

The Middlesex-London Health Unit acknowledges the Public Health Agency of Canada (PHAC), who funded this survey. PHAC provided support for administering the I-Track survey by offering comprehensive training and interview tools, and their guidance and feedback were integral to the analysis of local data included in this report.

The Health Unit also gratefully acknowledges the collaborative contributions of the Regional HIV/AIDS Connection (RHAC) in London, Ontario, which were instrumental for participating in I-Track. Survey participants were recruited through RHAC's Counterpoint Needle Exchange Program. RHAC staff administered the survey to local participants, collected their finger prick blood samples, and ensured that all other aspects of the interview protocol were met.

Finally, the Health Unit acknowledges and thanks the local I-Track survey respondents. Their participation made this report possible, and was an important contribution to the national I-Track sample.

I. Introduction

I-Track is an enhanced behavioural and biological surveillance system of people who inject drugs developed by the Public Health Agency of Canada (PHAC). Surveys are cross-sectional and cyclical, and include collection of a biological specimen, either blood or saliva. I-Track takes place in sentinel urban and semi-urban sites across Canada (PHAC, 2012a). After a pilot of five sites was conducted, the first phase of the I-Track survey occurred from 2003-2005 and included seven sentinel sites. The second phase was from 2005-2008, and involved 10 sentinel sites. London became involved for the first time in Phase 3 from 2010-2012, along with 10 other sentinel sites (PHAC, 2010). Sites that have participated in each phase have varied over time. Participants are recruited using convenience sampling methods specific to each site, in order to access this difficult to reach population. To be eligible to participate, respondents must have injected drugs in the past six months, be at least 16 years old and able to provide informed consent, be able to speak English or French, and must not have already participated in the current survey phase (PHAC, 2013). Some of the main goals of the I-Track system are to provide descriptive data on injection drug use and sexual practices, hepatitis C and Human Immunodeficiency Virus (HIV) testing behaviours, and to estimate hepatitis C and HIV prevalence at the national, regional and local levels (PHAC, 2012a).

Injection drug use is a major risk factor for bloodborne infections such as hepatitis C and HIV. In fact, injection drug use has been implicated as the predominant risk factor for hepatitis C acquisition; about 70-80% of new cases in Canada are thought to be acquired in this manner (Wong & Lee, 2006). Similarly, according to PHAC (2012b), people who inject drugs remain a key risk group in the ongoing infection and transmission of HIV: about 13.7% of new HIV infections are attributed to injection drug use. This rate of infection represents a significant public health risk, as people in this population may engage in high-risk activities such as sharing of needles/injection equipment and having unprotected sex, and therefore can transmit their infection to others (Ogunnaike-Cooke, Archibald et al., 2013; PHAC 2012a).

Both hepatitis C and HIV have significant long-term health consequences. Persons chronically infected with hepatitis C may develop cirrhosis, hepatocellular carcinoma and eventually require a liver transplant (Wong & Lee, 2006). In Ontario, hepatitis C has been found to account for more years of life lost (YLL) and morbidity than any other infectious disease, while HIV was sixth in terms of YLL and morbidity (Kwong et al., 2010). In the case of HIV, undetected infection will eventually progress to Acquired Immune Deficiency Syndrome (AIDS) with opportunistic infections and cancers (Bennett & Gilroy, 2013). Initial infection for both diseases may be mild or clinically unapparent, and therefore may go undetected. Proper treatment can help slow the disease processes and improve prognosis (Holmberg, Spradling, Moorman & Denniston, 2013; Bennett & Gilroy, 2013). The advent of highly active anti-retroviral therapy (HAART) has significantly reduced mortality in HIV-infected patients (Bennett & Gilroy, 2013). Likewise, there are now many genotype-specific hepatitis C therapies available and many new promising therapies in development (Liang & Ghany, 2013). Awareness of infection is essential so that treatment can be started to improve health outcomes and to prevent spread to others. However, many persons are unaware of their infection status. In the United States, the Centers for Disease Control and Prevention (CDC) has recommended mass hepatitis C screening for people born from 1945-1965 (Liang & Ghany, 2013). Some organizations in Canada recommend doing so as well. The Canadian Liver Foundation recently recommended hepatitis C screening for the birth cohort from 1945-1975 (Canadian Liver Foundation, 2012). In addition, hepatitis C/HIV co-infection is common given the shared parenteral mode of transmission, and management of these patients is far more difficult (Wong & Lee 2006).

Among the general Canadian population, HIV surveillance indicates that the incidence (new cases) and prevalence (existing cases) is fairly low. In Canada in 2011, the estimated number of new HIV cases was 3,175 cases. The estimated number of people in Canada living with HIV and AIDS in 2011 was 71,300. This represents an HIV prevalence rate of 208 cases per 100,000, or approximately 0.2% of the total population (PHAC, 2012b). The Middlesex-London Health Unit (MLHU) Community Health Status Resource (CHSR) presents local and Ontario health statistics, including data on HIV. While prevalence

rates are not available for comparison to provincial or national figures, the MLHU incidence rate of HIV was significantly lower than that of the province's incidence rate from 2005-2009. In 2010, while the rates of HIV in MLHU were not statistically different than the province, MLHU's rate was 4.2 cases of HIV per 100,000, compared to the province's rate of 6.4 cases of HIV per 100,000 (MLHU CHSR, 2012a).

Similarly, for Canada in 2007, the estimated prevalence of hepatitis C, including acute and chronic cases, was about 242,500 cases or 0.8% of the population (Remis, 2007). The Canadian 2009 incidence rate of acute hepatitis C infections was 33.7 per 100,000 (PHAC, 2009). The Middlesex-London rate of newly reported hepatitis C infections increased between 2006 and 2010, and has remained significantly higher than the Ontario rate. In 2010, the MLHU incidence rate was 53.4 per 100,000 population, while the Ontario rate, at just 33.1 cases per 100,000, was similar to the Canadian rate (MLHU CHSR, 2012b). However, while the MLHU and Ontario rates represent newly reported hepatitis C cases, it is important to note that although some are acute, most are likely chronic infections, and it is often not possible to differentiate them.

The prevalence of these bloodborne diseases is much higher in people who inject drugs, compared to the general Canadian population. The prevalence of HIV and hepatitis C in Canadian people who inject drugs has remained relatively stable in the past decade. The current Phase 3 of the I-Track study, conducted from 2010-2012, found that in the entire national sample (n=2,687), HIV seroprevalence was 11%, while lifetime prevalence of hepatitis C was 68% (Tarasuk, Ogunnaike-Cooke, Archibald et al., 2013). About 9% of the Phase 3 I-Track sample was co-infected with both viruses (Tarasuk, Ogunnaike-Cooke, Archibald et al., 2013). The previous Phase 2 results from 2005-2008 indicated that the overall prevalence of HIV in the sample was 14% among males and 12% among females, while lifetime hepatitis C prevalence was 69% in both males and females. Finally, the original I-Track Phase 1 results from 2003-2005 found an HIV prevalence of 13% and a hepatitis C prevalence of 66% (PHAC, 2010).

Opioids such as heroin are a class of drugs that are commonly injected by people in this population. Recently, there has been a disturbing trend of injecting prescription opioids such as morphine and hydromorphone (Dilaudid) (Fischer & Argento, 2012). In addition to bloodborne viral and bacterial infections resulting from injection practices, there are other serious sequelae associated with prescription drug misuse which include: addiction, injuries, overdose and death, irrespective of whether these drugs are legally or illegally sourced (National Advisory Committee on Prescription Drug Misuse [NACPDM], 2013). Further, there appears to be an increase in criminal activity to divert prescription drugs to illegal markets (Royal Canadian Mounted Police, 2010). Prescription drugs may be illegally obtained via "double doctoring", forgery, theft/robbery, or from the Internet (Royal Canadian Mounted Police, 2010). Globally, Canada has the second highest consumption level of prescription opioids, behind only the United States. In addition, the increase in consumption over recent years has occurred more sharply than in the United States (Fischer & Argento, 2012). In Ontario over the past decade, rapid increases, by about 2.5 times, have occurred in emergency visits due to narcotics withdrawal, intoxication/overdose, psychosis and related misuse, and there has been a nearly threefold increase in opioid-related deaths in the same period (Fischer & Argento, 2012). Treatment for prescription opioid addiction and methadone maintenance has also increased rapidly over the past decade, predominantly driven by misuse of prescription opioids (Fischer & Argento, 2012).

This year, the NACPDM published a comprehensive evidence-informed document with five streams of action and recommendations to address Canada's prescription drug crisis, including: prevention, education, treatment, monitoring/surveillance and enforcement (NACPDM, 2013). A specialized, nationally coordinated surveillance system for the monitoring of prescription drug use has been urged, given the scope of this public health issue. The analysis of data such as the I-Track survey, particularly at the local level, contributes important surveillance intelligence, and hopefully, provides insight into the needs of people who inject drugs that can inform local prevention, education and treatment efforts.

II. Methods

Locally, MLHU partnered with the Regional HIV/AIDS Connection (RHAC) to recruit participants and interviewers, and to interview eligible people who inject drugs. In early January 2012, representatives from PHAC delivered training to interviewers from RHAC; some members of the MLHU Oral Health Communicable Disease & Sexual Health service area also attended. Due to time constraints, survey promotion and recruitment began just one to two days before initial interviews were scheduled (RHAC, 2012). Recruitment occurred predominantly via non-random convenience sampling of people who inject drugs who came in to use the Counterpoint Needle and Syringe Exchange program (NEP) at RHAC, with word-of-mouth spread resulting in additional recruitment (sometimes referred to as “snowball sampling”). Posters were placed in the reception and NEP areas at RHAC, and reception staff and volunteers also told eligible participants about the survey. Eligibility criteria for the participants of I-Track in London were the same as described in the Introduction. Interviews were conducted between January 17 and February 28, 2012 (RHAC, 2012). Interviewers entered data on laptops provided by PHAC using an electronic data collection tool during interviews.

Respondents were asked questions about basic demographic information, injection and other drug use, sexual behaviours, health/community service use, HIV and hepatitis C testing behaviours and knowledge and attitudes regarding HIV infection. A blood sample was collected via lancet finger prick from consenting participants; the blood was smeared on a dried blood sample (DBS) card for laboratory analysis for HIV and hepatitis C infection (methodology described elsewhere in Tarasuk, Ogunnaike-Cooke, Archibald et al., [2013]). Data entered on laptops and DBS cards were stored in a locked cabinet at a secure location on RHAC premises. Data were backed up daily, and password protected; encrypted data files were sent weekly to PHAC via email. The DBS cards were dried, bundled in groups of 50, and shipped via secure courier to the National HIV & Retrovirology Laboratories (NRHL) in Ottawa for testing (PHAC, 2012a). Participants received an honorarium of \$20 in gift cards of their choice and/or bus tickets, which was advertised as part of the recruitment strategy. Counselling on safer injection and sexual practices, as well as testing for bloodborne infections, were provided as needed to participants as per usual RHAC practice (RHAC, 2012). PHAC obtained research ethics approval for the I-Track survey as a whole, and MLHU’s Research Advisory Committee (RAC) also reviewed and approved the study locally.

There are some limitations of the survey and methodology. A non-random convenience sampling method of volunteers who used the local needle exchange program was employed. This may introduce selection bias, as volunteers may be different than non-volunteers in their risk profile (PHAC 2012a). For example, they may be more motivated to protect their health or obtain the benefits of participation (the honorarium), so results may not be representative of people who inject drugs as a whole. As with any survey, self-report data are subject to recall bias. There is also potential for social desirability bias in answering questions on sensitive topics such as drug use, sexual behaviours and illegal activities. Every effort was made by survey experts at PHAC to reduce or eliminate these biases through interviewer training, using interviewers known to the population, and providing safe and private areas to conduct interviews. Careful management and coordination of recruitment and interviewing activities also occurred to reduce duplicate participation.

The data from London form the basis of this primarily local analysis. The methods and definitions used are the same those used in the overall national level data, which includes London and data from all the other sites, as presented by Tarasuk, Ogunnaike-Cooke, Archibald et al. (2013). Chi-squared and independent samples t-tests are used for significance testing of sex-based differences in the local sample. In addition, totals from the overall national sample are presented for comparison.

Not applicable responses due to skip patterns in the questionnaire are excluded from analyses of individual variables as per analytical guidelines. Similarly, “don’t know” and “refused” responses are excluded from analyses when these responses comprised less than 5% of the sample. As such, some variables have fewer than the total number of respondents. When “don’t know/refused” responses comprise more than 5% of the sample, it is noted accordingly, and they are included as a separate response category in the analysis.

III. Results

1. Demographics

The demographic differences in the overall national and London samples, and a breakdown of the London sample by sex, are outlined in Table 1. In total, there were 204 respondents in the London sample. Of these, there were 150 (73.5%) males and 54 (26.5%) females. This is a similar pattern to the national sample, where among a total of 2,687 respondents, 68.2% were male and 31.8% female. The average age of respondents in the London sample was 36 years, although males were significantly older than females. In the national sample, the average age of respondents was 39 years.

Approximately 12.3% of the London sample identified as gay, lesbian, two-spirit or bisexual, with significantly more females (25.9%) than males (7.3%) in this category. Further, 19.1% of the London sample self-identified as Aboriginal, which was lower than the national sample (36.1%). In the London sample, 52.9% of respondents had less than high school education, with more females (59.3%) than males (50.7%) in this category. This pattern is similar to the national sample, where 55.7% of all respondents who had completed less than high school. In the London sample, 43.8% of respondents had less than \$1000 income to live on each month, while 54.1% of the national sample had the same amount of income. In London, a total of 56.9% of respondents had an unstable housing situation, with significantly more males (61.3%) than females (44.4%) in unstable housing. This is much higher than the national sample, where only 38.7% of respondents reported unstable housing. Finally, in London, 20.1% of respondents had been in jail in the past six months, with significantly more males than females having been in jail in the previous six months. This proportion is higher than in the national sample, where 11.5% of the total sample had been in jail in the past six months.

Table 1: Demographic characteristics, National and London I-Track samples ^a

Characteristic	National Sample		London - Total		London - Males		London - Females		p-value – sex comp.
	N	%	N	%	N	%	N	%	
Age (years)									
Range	16-71		17-60		17-60		18-54		
Median	40		36		36.5		32		
Mean (±sd)	39.4 (10.5)		36.2 (10.8)		37.3 (10.6)		33.2 (11.0)		0.019
	N	%	N	%	N	%	N	%	
Sex	2687 100%		204 100%		-	-	-	-	
Male	1832	68.2%	150	73.5%	-	-	-	-	
Female	855	31.8%	54	26.5%	-	-	-	-	
Sexual orientation									
Gay/Lesbian/ Two Spirit/ Bisexual	NA	NA	25	12.3%	11	7.3%	14	25.9%	
Straight	NA	NA	179	87.7%	139	92.7%	40	74.1%	
Ethnicity									
Aboriginal	968	36.1%	39	19.1%	28	18.7%	11	20.4%	
Other	1710	63.9%	165	80.9%	122	81.3%	43	79.6%	
Education									
Less than high school	1492	55.7%	108	52.9%	76	50.7%	32	59.3%	
High school	560	20.9%	49	24.0%	36	24.0%	13	24.1%	
More than high school	627	23.4%	47	23.0%	38	25.3%	9	16.7%	
Monthly income									
Less than \$500	379	14.4%	33	16.4%	26	17.6%	7	13.2%	
\$500 to \$999	1049	39.7%	55	27.4%	39	26.4%	16	30.2%	
\$1000 to \$1999	775	29.3%	74	36.8%	51	34.5%	23	43.4%	
\$2000 or more	438	16.6%	39	19.4%	32	21.6%	7	13.2%	
Housing situation									
Stable housing	1637	61.3%	88	43.1%	58	38.7%	30	55.6%	
Unstable housing	1032	38.7%	116	56.9%	92	61.3%	24	44.4%	
In jail in past six months	308	11.5%	41	20.1%	~	~	~	~	0.012

^a Percentages in categories may not sum to 100% due to rounding

± sd Plus or minus standard deviation

NA Not available

NS No statistically significant differences between males and females at p=0.05

~ Suppressed due to cell size <5

2. Drug Use Behaviours

Information about injection behaviours in the national and London samples is provided in Table 2. The median age at first injection was 23 years in London and 21 years for the national sample. In London, 38.2% of respondents were in methadone treatment, with more women in methadone treatment (50.0%) than men (34.0%). Among London respondents, 47.3% injected alone. There were significant sex differences however; women were more likely to shoot up with a regular sex partner (42.6%), while men were more likely to shoot up alone (52.3%). In the national sample, 40.1% of respondents shoot up alone. In the London sample, the location where injection most often occurred was one's own residence (47.8%), although more women (26.4%) than men (15.5%) shoot up at a friend's place. However, 10.4% of the London sample injects in a public place.

Prescription drugs were the predominant drugs injected by the London sample. Figure 1 shows the drugs that participants were asked about injecting in the past six months. Of all the drugs that people were asked about using, morphine (non-prescribed) and hydromorphone (Dilaudid) were tied as the drugs that the highest proportion of participants had injected in the past six months, with 75.5% of all respondents reported using each of these drugs in the past six months. This proportion is much higher than in the national sample, with 47.0% injecting non-prescribed morphine and 47.2% injecting hydromorphone. The next most frequently used drugs were oxycontin (69.1% of the London sample, compared to 37.7% of the national sample), methamphetamine (68.1%) and Ritalin (66.2%) (London only, no comparisons for these two drugs is available in the national sample). Injecting cocaine was reported by 58.3% of the London sample, and showed the greatest difference between females (50.0%) and males (61.3%). In the national sample however, cocaine was the drug injected by the highest proportion of respondents (64.3%). Another drug that was common in the London sample was crack, with 49.0% of the sample injecting crack, compared to 24.8% of the national sample. Heroin was less common in both samples; 17.2% of the London sample and 26.7% of the national sample had injected heroin in the past six months.

Figure 2 shows the non-injected drugs used by the London sample in the past six months; this information was not available for the national sample. This includes drugs that were snorted, smoked, drank, eaten or used as a patch in the previous six months. Marijuana was the most frequently used drug, reported by 73.0% of London respondents. Significantly more men (77.3%) than women (61.1%) used marijuana. Other common non-injected drugs included: alcohol (51.5% of all respondents), followed by crack/freebase (48.5%), oxycontin (42.6%) and cocaine (40.7%). More males than females used crack and cocaine, while more women than men used oxycontin.

Data on injection frequency are shown in Table 3. The majority of respondents who injected in the past month were daily injectors (52.0%). Amongst those who injected daily, the average number of injections per day was 3.9, while the median number of injections per day was three, and ranged from a low of one injection to a high of 20 injections. Amongst respondents who injected in the past month, the average number of injections per month was 71.3, with a median of 56 injections per month, and ranging from a low of one to a high of 650 injections. The upper limit of the range for both the daily number and monthly number of injections was much higher for males than for females.

Injection risk behaviours, such as borrowing and lending needles and other equipment, are outlined in Table 4. The vast majority of all London respondents (94.6%) and national respondents (94.5%) had a sterile last injection; a sterile last injection is defined as: "a brand new needle and/or syringe that had not been previously used by anyone, including yourself" (PHAC, 2012c). In the London sample, 19.6% of respondents borrowed needles in the past six months, compared to 15.5% of the national sample. A higher proportion of the London sample (26.6%) lent needles to others in the past six months than did the national sample (15.5%). London women more frequently lent needles (35.8%) than men (23.3%). Borrowing other injection equipment was more common than borrowing needles; 42.9% of London sample compared to 34.5% of the national sample borrowed other injection equipment. Borrowing other injection equipment was more common amongst London females (50.0%) than males (40.3%). Similarly, 43.6% of the London sample lent other injection equipment, while only 33.1% of the national sample did so. Again, more London females (48.1%) lent other injection equipment, compared to 41.9% of London males.

Table 2: Injection behaviours, National and London I-Track samples ^{a, b}

Indicator	National Sample		London – Total		London - Males		London - Females		p-value - sex comp.
	N	%	N	%	N	%	N	%	
Age at first injection (years)									
Range	3-60		11-49		11-45		12-49		
Median	21		23		23		23		
Mean (±sd)	23.4 (8.9)		24.8 (8.9)		24.6 (8.8)		25.4 (9.1)		NS
Taken prescribed methadone in past six months	NA	NA	78	38.2%	51	34.0%	27	50.0%	0.056
Most frequent shooting partner									0.034
Alone	1057	40.1%	96	47.3%	78	52.3%	18	33.3%	
Regular sex partner	644	24.4%	56	27.6%	33	22.1%	23	42.6%	
Friends/people you know well	673	25.5%	39	19.2%	27	18.1%	12	22.2%	
Casual sex partner(s)	37	1.4%	5	2.5%	~	~	~	~	
People you don't know well	122	4.6%	5	2.5%	~	~	~	~	
People you don't know at all	9	0.3%	~	~	~	~	~	~	
Client sex partner ^c	9	0.3%	0	0.0%	-	-	-	-	
Paid sex partner ^c	~	~	0	0.0%	-	-	-	-	
Location most often injected									
Own apartment / house	NA	NA	96	47.8%	71	48.0%	25	47.2%	0.044
Friend's place	NA	NA	37	18.4%	23	15.5%	14	26.4%	
Shelter / hostel	NA	NA	29	14.4%	~	~	~	~	
Public place (e.g., street, park, squats, subway, underpass, washroom, stairwell, etc.)	NA	NA	21	10.4%	16	10.8%	5	9.4%	
Rooming / boarding house	NA	NA	6	3.0%	~	~	~	~	
Hotel / motel room	NA	NA	5	2.5%	~	~	~	~	
Other places (e.g. shooting gallery, parents' place)	NA	NA	~	~					

^a Percentages in categories may not sum to 100% due to rounding

^b Some variables have fewer than the total number of respondents due to not applicable or non-response in sample

^c Client sex partner is *one who* gave money, drugs, goods or anything else in exchange for sex with the respondent. Paid sex partner is *one to whom* the respondent gave drugs, goods or anything else in exchange for sex (Tarasuk, Ogunnaike-Cooke, Archibald et al., 2013).

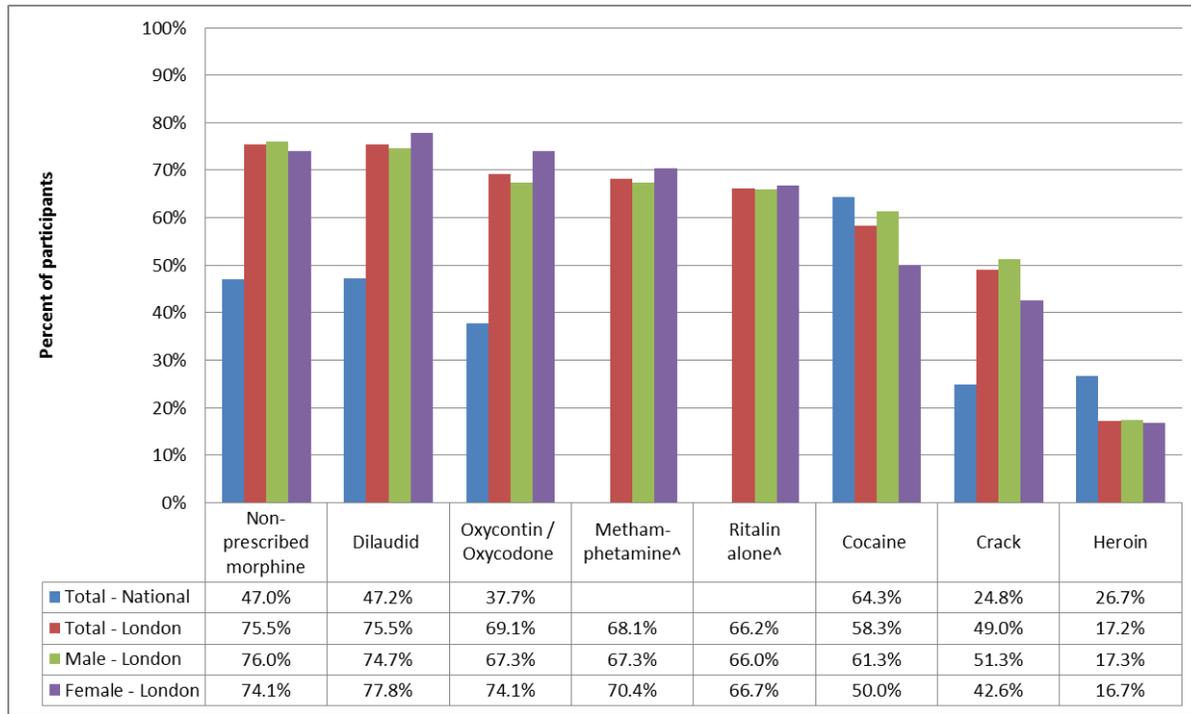
±sd Plus or minus standard deviation

NA Not available

NS No statistically significant differences between males and females at p=0.05

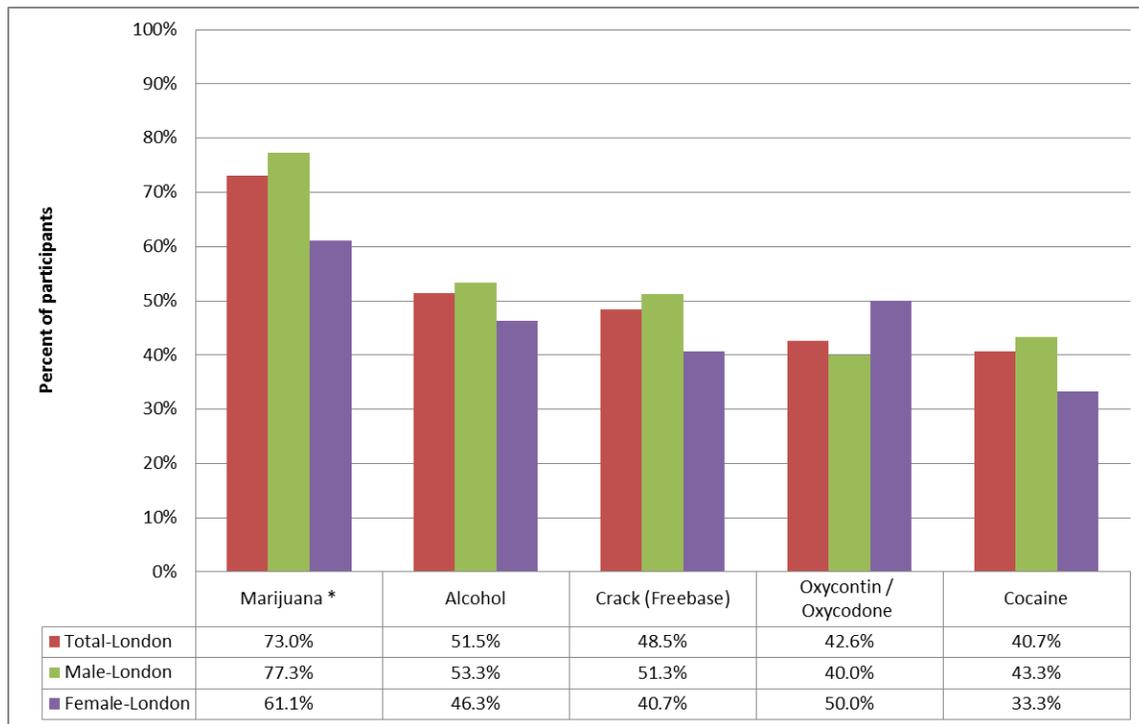
~ Suppressed due to cell size <5

Figure 1: Selected drugs injected in the past six months, National and London I-Track samples



[^] Information on these drugs was not available for the national sample

Figure 2: Selected non-injected drugs used in the past six months, London I-Track sample (n=188^a)



^a Not all London respondents used non-injected drugs. Data about non-injection drug use was not available from the national sample.

* Statistically significant difference between males and females (p=0.034)

Table 3: Injection frequency in the past month, London I-Track sample

Indicator	London – Total		London - Males		London – Females		p-value - sex comp.
	N	%	N	%	N	%	
Injection frequency in past month							NS
Not at all	12	5.9%	10	6.7%	2	3.7%	
Once in a while, not every week	18	8.8%	13	8.7%	5	9.3%	
Regularly, once or twice a week	29	14.2%	23	15.3%	6	11.1%	
Regularly, three or more times per week	39	19.1%	27	18.0%	12	22.2%	
Every day	106	52.0%	77	51.3%	29	53.7%	
Number of times injecting per day (amongst daily injectors, n=106)							NS
Range (injections per day)	1-20		1-20		1-10		
Median (injections per day)	3		3		3		
Mean (injections per day (±sd))	3.9 (2.7)		3.9 (2.9)		4.0 (2.3)		
Estimated number of times injecting per month (amongst all who injected in past month, n=190)							NS
Range (injections per month)	1-650		3-650		1-280		
Median (injections per month)	56		56		56		
Mean (injections per month (±sd))	71.3 (84.6)		72.8 (90.3)		67.1 (67.3)		

NS No statistically significant differences between males and females at p=0.05

Table 4: Injection risk behaviours, National and London I-Track samples ^a

Risk Behaviour	National Sample		London – Total		London - Males		London - Females		p-value - sex comp.
	N	%	N	%	N	%	N	%	
Sterile last injection	2516	94.5%	191	94.6%	139	94.0%	52	96.3%	NS
Borrowed needles in past six months	415	15.5%	40	19.6%	28	18.7%	12	22.2%	NS
Borrowed any other equipment (e.g. water, cooker) in past six months	922	34.5%	87	42.9%	60	40.3%	27	50.0%	NS
Lent needles in past six months	409	15.5%	54	26.6%	35	23.3%	19	35.8%	NS
Lent any other equipment (e.g. water, cooker) in past six months	880	33.1%	88	43.6%	62	41.9%	26	48.1%	NS

^a Some variables have fewer than the total number of respondents due to not applicable or non-response in sample
 NS No statistically significant differences between males and females at p=0.05

3. Sexual Risk Behaviours

Table 5 shows that in the London sample, 54.0% of participants were sexually active in the past month. Women were significantly more likely to have been sexually active in the past month (74.1%) than men (46.6%). In the London sample, 31.2% of respondents who reported sexual activity in the past month used a condom during their last sexual encounter, which is less than 36.6% of respondents in the national sample. In London, 35.6% of all respondents had multiple sex partners in the past six months, and significantly more women (46.3%) than men (31.8%) reported having multiple sex partners. Amongst the small number of female and male sex workers in the London sample (21 people), 71.4% reported condom use at the last client sexual encounter. This is less than the national sample, where 77.1% of sex workers reported condom use at their last client sexual encounter. In London, 36.8% of the sample had ever been diagnosed with a sexually transmitted/bloodborne infection (STBBI), with significantly more females (53.7%) than males (30.6%) diagnosed with an STBBI. This is consistent with 39.3% of all national respondents having ever been diagnosed with an STBBI.

Table 5: Sexual risk behaviours, National and London I-Track samples ^a

Risk Behaviour	National Sample		London – Total		London - Males		London - Females		p-value - sex comp.
	N	%	N	%	N	%	N	%	
Had sex in past month	NA	NA	109	54.0%	69	46.6%	40	74.1%	0.001
Condom use during most recent sex (among those who had sex in past month)	777	36.6%	34	31.2%	21	30.4%	13	32.5%	NS
Two or more sexual partners in past six months,	920	34.4%	72	35.6%	47	31.8%	25	46.3%	0.02
Condom use at last sex with client sex partner ^b	236	77.1%	15	71.4%	~	~	~	~	NS
Ever diagnosed with an STBBI	680	39.3%	74	36.8%	45	30.6%	29	53.7%	0.004

^a Some variables have fewer than the total number of respondents due to not applicable or non-response in sample

^b Client sex partner is one who provided money, drugs, goods or anything else in exchange for sex with the respondent Tarasuk, Ogunnaike-Cooke, Archibald et al., (2013). In London sample, sex workers n=21.

NS No statistically significant differences between males and females at p=0.05

~ Suppressed due to cell size <5

4. Hepatitis C and HIV Results and Testing Behaviours

The results of dried blood sample (DBS) testing are provided in Table 6, and show an extremely high lifetime prevalence of hepatitis C: 79.1% of the London sample, which is much higher than 68.0% of the national sample. This test does not distinguish between acute and chronic hepatitis C infections, and the vast majority are likely chronic. Further, there is a sex difference in that 81.7% of males compared to 71.7% of females tested positive for hepatitis C. For HIV, the prevalence was lower in the London sample (5.5% of respondents) than in the national sample (10.9% of respondents). Of those in the London sample who provided an adequate DBS for both hepatitis C and HIV testing, 5.6% were HIV/hepatitis C co-infected, meaning that they had both HIV and hepatitis C infections. In the national sample, 9.2% of respondents were HIV/hepatitis C co-infected, and just 1.7% were HIV positive without having hepatitis C. The majority of the London sample (73.4%), was seropositive for hepatitis C only; 77.1% of males and 63.0% of females had hepatitis C without having HIV. The overall proportion is higher than 58.8% of the national sample that was infected with hepatitis C only without having HIV. In London, 20.9% of respondents were infected with neither hepatitis C nor HIV (18.3% of males and 28.3% of females), which is lower compared to 30.3% of the national sample with neither hepatitis C nor HIV. Although the number is very small, six of the 10 people in London with HIV (60.0%) were unaware of their HIV positive status. This proportion is much higher than the national sample, where just 21.4% were unaware of their HIV positive status.

Table 7 shows that in London, 86.1% of participants had ever been tested for HIV, which is lower than the national sample, where 92.9% of participants had ever been tested for HIV. Among those who reported being HIV negative, 80.7% of the London sample (78.5% of males and 86.7% of females) had an HIV test in the past two years. The comparable figure in national sample was 85.0%. The number of those who self-reported being HIV positive was too few to report additional information on care and treatment in the London sample. However, in the national sample, of those that self-reported being HIV positive, 95.0% were under a doctor's care, 77.0% had ever taken drugs for HIV, and 66.0% were currently still taking the drugs.

In London, 87.6% of the sample had ever been tested for hepatitis C, slightly less than 91.4% of the national sample. Further, just 32.6% of the London sample who reported being currently infected with hepatitis C was receiving a doctor's care for their infection, which is much lower than 48.4% in the national sample. Similarly, the number of participants in the London sample currently taking prescribed drugs for hepatitis C was too small to report, and only a very small proportion of the national sample (2.4%) were taking drugs for hepatitis C.

Table 6: HIV and Hepatitis C laboratory testing results, National and London I-Track samples ^a

Indicator	National Sample		London - Total		London - Males		London - Females		p-value - sex comp.
	N	%	N	%	N	%	N	%	
HIV seroprevalence	282	10.9%	10	5.5%	~	~	~	~	NS
Lifetime hepatitis C prevalence	1750	68.0%	140	79.1%	107	81.7%	33	71.7%	NS
Combined HIV & hepatitis C serostatus									NS
Seropositive for HIV only	44	1.7%	0	0.0%	0	0.0%	0	0.0%	
Seropositive for hepatitis C only	1514	58.8%	130	73.4%	101	77.1%	29	63.0%	
Seropositive for both HIV & hepatitis C	236	9.2%	10	5.6%	~	~	~	~	
Seronegative for both HIV & hepatitis C	781	30.3%	37	20.9%	24	18.3%	13	28.3%	
Unaware of HIV positive status, (among those who were HIV seropositive) ^b	60	21.4%	6	60.0%	~	~	~	~	NS

^a Some variables have fewer than the total number of respondents due to not applicable or non-response in sample. As well, not all respondents consented to or were able to provide an adequate dried blood sample (DBS) specimen.

^b This applied to a very small number of participants in London sample (n=10); interpret with caution.

NS No statistically significant differences between males and females at p=0.05

~ Suppressed due to cell size <5

Table 7: HIV and Hepatitis C testing behaviours, care and treatment, National and London I-Track samples ^a

Indicator	National Sample		London - Total		London - Males		London - Females		p-value - sex comp.
	N	%	N	%	N	%	N	%	
HIV testing, care and treatment									
Ever tested for HIV	2468	92.9%	174	86.1%	128	86.5%	46	85.2%	NS
Tested for HIV in past two years (among those who reported being HIV negative)	1709	85.0%	134	80.7%	95	78.5%	39	86.7%	NS
Under doctor's care for HIV (among those who reported being HIV positive)	95	95.0%	~	~	~	~	~	~	NA
Ever taken prescribed drugs for HIV (among those who reported being HIV positive)	77	77.0%	~	~	~	~	~	~	NA
Currently taking prescribed drugs for HIV (among those who reported being HIV positive)	66	66.0%	~	~	~	~	~	~	NA
Hepatitis C testing, care and treatment									
Ever tested for hepatitis C	2417	91.4%	176	87.6%	129	87.8%	47	87.0%	NS
Under doctor's care for hepatitis C (among those who reported being currently infected with hepatitis C)	514	48.4%	30	32.6%	23	33.8%	7	29.2%	NS
Currently taking prescribed drugs for hepatitis C (among those who reported being currently infected with hepatitis C)	25	2.4%	~	~	~	~	~	~	NA

^a Some variables have fewer than the total number of respondents due to not applicable or non-response in sample.

NA Not applicable

NS No statistically significant differences between males and females at p=0.05

~ Suppressed due to cell size <5

5. Health Services Accessed

A variety of health and other services were accessed by London and national respondents in the past year. Table 8 shows that in general, in London, women tended to use each service more than men. Most services were used in similar frequency by London and national respondents overall. Almost all London respondents reported using a needle exchange or harm reduction service (96.0%). This was higher than 89.0% of respondents in the national sample as a whole, and is likely due to the local recruitment strategy through the needle exchange program. In London, 66.5% of respondents reported going to a hospital, with more females (75.5%) than males (63.3%) visiting a hospital. This is slightly more than 59.4% of national respondents going to hospital. Community drop-in and community health centres were also used in higher frequency by the London sample (66.0% and 53.0%, respectively) than in the national sample (54.5% and 44.9%, respectively). In London, 29.3% of respondents used the services of a medical/walk-in clinic, with a significantly higher proportion of women (49.1%) than men (22.1%) accessing one. This is compared to 47.1% of national respondents accessing a medical/walk-in clinic. Just over one-third of respondents (34.5%) in London reported having tried detox or drug treatment, which is comparable to the national sample (32.2%). In London, 28.5% of the sample accessed a mental health or addiction centre (37.7% of females and 25.2% of males), compared to 23.7% of the national sample. In London, 8.0% of the sample accessed a sexual health centre, with a significantly higher proportion of women (18.9%) than men (4.1%) doing so. This is slightly less than 9.6% of national respondents that accessed a sexual health centre.

In addition, respondents were asked about using over 50 individual services. Two of these were provided by MLHU: The Clinic (11 people used this service) and the MLHU site of the Counterpoint Needle and Syringe program (21 people used this service).

Table 8: Health services accessed in past 12 months, National and London I-Track samples ^a

Service	National Sample		London – Total		London - Males		London - Females		p-value - sex comp.
	N	%	N	%	N	%	N	%	
Needle exchange/harm reduction service	1541	89.0%	192	96.0%	141	95.9%	51	96.2%	NS
Hospitals	1029	59.4%	133	66.5%	93	63.3%	40	75.5%	NS
Community drop-in centres	945	54.5%	132	66.0%	94	63.9%	38	71.7%	NS
Community health centres	779	44.9%	106	53.0%	75	51.0%	31	58.5%	NS
Detox or drug treatment facility	557	32.2%	69	34.5%	51	34.7%	18	34.0%	NS
Medical/Walk-in clinics	815	47.1%	58	29.3%	32	22.1%	26	49.1%	<0.001
Mental health and addictions centre	409	23.7%	57	28.5%	37	25.2%	20	37.7%	NS
Culturally-based services	173	10.0%	21	10.5%	~	~	~	~	NS
Sexual health centre	165	9.6%	16	8.0%	6	4.1%	10	18.9%	0.002

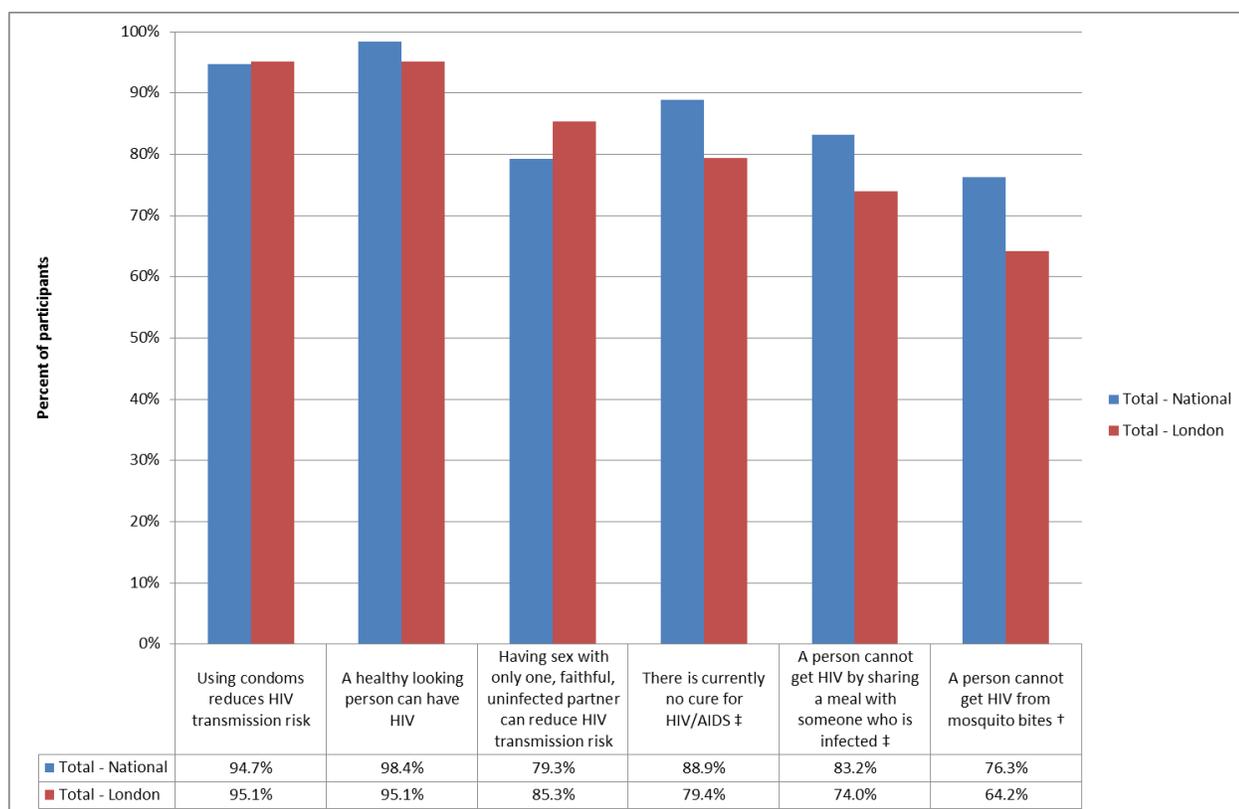
^a Some variables have fewer than the total number of respondents due to not applicable or non-response in sample. NS No statistically significant differences between males and females at p=0.05

~ Suppressed due to cell size <5

6. Knowledge of HIV-related Risk Behaviours and Transmission

There was very high non-response to some items regarding HIV-related risk behaviour and transmission in the London sample, predominantly in the form of “don’t know” responses. Where non-response comprises 5% or more of the sample, it is noted. Because of the high non-response rates, results for these variables should be interpreted with caution. Figure 3 shows that in London, participants were most knowledgeable about condoms reducing HIV transmission and that a healthy looking person can have HIV (95.1% of respondents answered correctly for each question). This was similar to the national sample, where 94.7% of respondents knew that using condoms reduces the risk of HIV and 98.4% knew that a healthy looking person can have HIV. In the London sample, 85.3% of respondents knew that having sex with only one, faithful, uninfected partner could reduce the risk of transmission, which was more than 79.3% of the national sample. While 79.4% of the London sample correctly identified that there is no cure for HIV/AIDS, a higher proportion (88.9%) of the national sample did so. Seventy-four percent of the London sample correctly identified that sharing a meal with someone could not transmit HIV, although non-response for this item was high, at 9.8%. This is lower compared to 83.2% of national respondents who got correctly answered this question. Finally, respondents were less sure about whether mosquitos could transmit HIV, with just 64.2% of London respondents correctly identifying that mosquitos cannot transmit HIV. This question also had the highest proportion of “don’t know/refused” responses, about 22.1% of respondents. By contrast, 76.3% of the national sample knew that mosquitos cannot transmit HIV.

Figure 3: Knowledge of HIV and HIV transmission, National and London I-Track samples



‡ High proportion of “don't know/refused” responses (~10%) in London sample

† Very high proportion of “don't know/refused” responses (~20%) in London sample

IV. Summary and Conclusion

Demographically, the national and London samples were quite similar, although there was a higher proportion of Aboriginal people and a higher proportion of people with less than \$1000 monthly income in the national sample. London had a higher proportion of people who had unstable housing and a higher proportion of people who had recently been in jail than the national sample.

A slightly higher proportion of the London sample injected drugs alone than in the national sample. In London, the most common drugs of choice to inject were non-prescribed morphine, hydromorphone, and oxycontin/ oxycodone, while for the national sample the most commonly injected drug was cocaine. Marijuana was the most common non-injected drug used in London. London participants were more likely than national participants to borrow and lend needles and other injection equipment. Slightly fewer London participants reported condom use at last sex and at last sex with a client sex partner than in the national sample.

Results of dried blood sample laboratory testing in London showed a very high prevalence of lifetime hepatitis C, which was higher than in the national sample, and a lower prevalence of HIV in London than the national sample. All London respondents infected with HIV were also co-infected with hepatitis C. While there was a high prevalence of previous HIV and hepatitis C testing both nationally and in London, the prevalence of testing for both was slightly higher in the national sample. Although the number is very small, six of the ten people in London with HIV were unaware of their HIV positive status, which was a much higher percentage than in the national sample.

In general, the London sample more frequently accessed local health and community services than the national sample, with the exception of medical/walk-in clinics, which were accessed more frequently by the national respondents overall. Needle exchange programs were the service used most widely, with nearly all participants reporting use of a NEP in both the London and national samples. However, this is somewhat biased given that recruitment was done at needle exchange program sites for many participating sites, and was done exclusively at a NEP in London. London and national participants were fairly similar on their knowledge of HIV and its transmission, though non-response was an issue for some questions in the London sample.

These local I-Track results demonstrate that there is an active local population of people who inject drugs, with a high prevalence of hepatitis C and HIV. They inject opioid drugs most frequently. There appears to be a slightly higher prevalence of risk-associated behaviours for both injection and sexual practices in London than compared to the national sample. Appropriate programs and services such as needle exchange and sexual health services should continue to be offered, and additional harm reduction initiatives, based on a comprehensive community drug strategy, could further reduce the health risk and improve the health of this highly vulnerable population.

References

- Bennett, N.J. & Gilroy, S.A. (15 July 2013). HAART studies and DHHS guidelines. In R.A. Greenfield (Ed.), *HIV Disease Treatment and Management*. Retrieved from <http://emedicine.medscape.com/article/211316-treatment#aw2aab6b6b2>
- Canadian Liver Foundation. (September 2012). *Position Statement – Hepatitis C Screening*. Retrieved from http://www.liver.ca/files/PDF/Position_Statements/CLF_Position_Statements_-_Testing_for_hepatitis_C_-_FINAL.pdf
- Fischer, B., & Argento, E. (2012). Prescription opioid related misuse, harms, diversion and interventions in Canada: A review. *Pain Physician*, 15, ES191–ES203.
- Holmberg, S.D., Spradling, P.R., Moorman, A.C. & Denniston, M.M. (2013). Hepatitis C in the United States. *New England Journal of Medicine*, 368(20), 1859–1864.
- Kwong, J.C., Crowcroft, N.S., Campitelli, M.A., Ratnasingham, S., Daneman, N., Deeks, S.L. & Manuel, D.G. (2010). *Ontario Burden of Infectious Disease Study Advisory Group; Ontario Burden of Infectious Disease Study (ONBOIDS): An OAHPP/ICES Report*. Toronto: Ontario Agency for Health Protection and Promotion, Institute for Clinical Evaluative Sciences.
- Liang, T.J. & Ghany, M.G. (2013). Current and future therapies for Hepatitis C virus infection. *New England Journal of Medicine*, 368(20), 1907–1917.
- Middlesex London Health Unit. (2012a). *Figure 8.29: HIV infections (ML and ON)*. Retrieved from <http://communityhealthstats.healthunit.com/chart/sexually-transmitted-and-blood-borne-infections/figure-829-reported-incidence-rate-hiv>
- Middlesex London Health Unit. (2012b). *Figure 8.26: Hepatitis C infections (ML and ON)*. Retrieved from <http://communityhealthstats.healthunit.com/chart/sexually-transmitted-and-blood-borne-infections/figure-826-reported-incidence-rates-hepatitis>
- National Advisory Committee on Prescription Drug Misuse. (2013). *First do no harm: Responding to Canada's prescription drug crisis*. Ottawa: Canadian Centre on Substance Abuse.
- Public Health Agency of Canada. (2006). *Enhanced surveillance of risk behaviours among injecting drug users in Canada (Phase 1 Report)*. Retrieved from <http://www.phac-aspc.gc.ca/i-track/sr-re-1/index-eng.php#execsumm>
- Public Health Agency of Canada. (2009). *Epidemiology of acute hepatitis C infection in Canada: Results from the enhanced Hepatitis strain surveillance system (EHSSS)*. Ottawa, ON: Author.
- Public Health Agency of Canada. (2010). Chapter 10: HIV/AIDS among people who inject drugs in Canada. In *HIV/AIDS Epi Update*. Retrieved from <http://www.phac-aspc.gc.ca/aids-sida/publication/epi/2010/10-eng.php>
- Public Health Agency of Canada. (2012a). *I-Track phase 3 procedural guidelines, London training 2012*. Ottawa, ON: Author.
- Public Health Agency of Canada. (2012b). *Summary: Estimates of HIV Prevalence and Incidence in Canada, 2011*. Retrieved from <http://webqa.phac-aspc.gc.ca/aids-sida/publication/survreport/estimat2011-eng.php>

- Public Health Agency of Canada. (2012c). *London codebook - Enhanced surveillance of risk behaviours among people who inject drugs in Canada. - Phase 3*. Ottawa, ON: Author.
- Regional HIV/AIDS Connection. (2012). *I-Track final report: London Ontario*. London, ON: Author.
- Remis R. (2007). *Modelling the incidence and prevalence of hepatitis C infection and its sequelae in Canada, 2007*. Ottawa, ON: Public Health Agency of Canada.
- Royal Canadian Mounted Police, Criminal Intelligence. (2010). *Report on the illicit drug situation in Canada -2009*. Retrieved from <http://www.rcmp-grc.gc.ca/drugs-drogues/2009/drug-droque-2009-eng.pdf>
- Tarasuk, J., Ogunnaike-Cooke, S., Archibald, C.P. and the I-Track Site Principal Investigators. (2013, April). *Descriptive findings from a national enhanced HIV surveillance system, I-Track Phase 3 (2010-2012): Sex-bases analysis of injecting, sexual and testing behaviours among people who inject drugs*. Poster presented at the 22nd Annual Canadian Conference on HIV/AIDS Research, Vancouver, BC.
- Wong, T. & Lee, S. (2006). Hepatitis C: A review for primary care physicians. *Canadian Medical Association Journal*, 174(5), 649-659.