

Report to/Rapport au :

Ottawa Board of Health
Conseil de santé d'Ottawa

March 18, 2013
18 mars 2013

Submitted by/Soumis par :
Dr. / D^{re} Vera Etches
Acting Medical Officer of Health/ Médecin chef en santé publique interim

*Contact Person / Personne ressource:
Sherry Nigro, Manager/Gestionnaire
Health Promotion and Disease Prevention/
Promotion de la santé et prévention des maladies
Ottawa Public Health/Santé publique Ottawa
613-580-2424, ext./poste 28971, sherry.nigro@ottawa.ca
and*

*Dr./ D^{re} Vera Etches, Acting Medical Officer of Health / Médecin chef en santé publique
interim*

*Ottawa Public Health / Santé publique Ottawa
613-580-2424, ext./poste 23675, vera.etches@ottawa.ca*

CITY WIDE / À L'ÉCHELLE DE LA VILLE

Ref N°: ACS2013-OPH-HPDP-0003

SUBJECT: ADDRESSING SUBSTANCE MISUSE IN OTTAWA

**OBJET : RÉDUIRE L'ABUS D'ALCOOL ET DE DROGUES DANS LA
RÉGION D'OTTAWA**

REPORT RECOMMENDATIONS

That the Board of Health for the City of Ottawa Health Unit approve that Ottawa Public Health continue to:

1. Work with partners to address substance misuse;
2. Raise public awareness of Canada's Low-Risk Alcohol Drinking Guidelines as per the Public Health Accountability Agreement; and
3. Fund the Ottawa School-based Substance Abuse Program, as outlined in the report.

RECOMMANDATIONS DU RAPPORT

Que le Conseil de santé de la circonscription sanitaire de la Ville d'Ottawa autorise Santé publique Ottawa à continuer de :

1. Collaborer avec ses partenaires dans la lutte contre la toxicomanie;

2. **Sensibiliser la population aux Directives de consommation d'alcool à faible risque du Canada, conformément à l'Entente de responsabilité en santé publique;**
3. **Financer le programme de prévention de la toxicomanie en milieu scolaire à Ottawa, comme le précise le présent rapport.**

EXECUTIVE SUMMARY

Mental illness, addiction, disease, violence, injury and suicide can have a devastating effect on individuals, families and communities affected by drug and alcohol misuse. But in addition to the obvious health and social impacts, the economic burden of substance misuse in Canada, excluding tobacco, is estimated to be \$22.8 billion annually, of which alcohol-related health care costs alone total \$3.3 billion.

Reducing the harms associated with alcohol and drug misuse requires a comprehensive approach. Like many health organizations and networks in Canada and around the world, Ottawa Public Health (OPH) relies on the four pillars of prevention, harm reduction, treatment and enforcement, as the basis for its programs and services. In keeping with the City of Ottawa's former Integrated Drug and Addiction Strategy, OPH also maintains a supporting foundation of community engagement to ensure that agencies from all sectors work together to address the needs of Ottawa residents.

Whereas the serious health and social impacts of non-medical use of prescription drugs and of illegal drug use are of concern, the most commonly misused substance in Ottawa is alcohol. Alcohol is often consumed in moderation however, when consumed in higher quantities it can facilitate high risk behaviours and lead to injuries. In addition, alcohol leads to a greater burden of illness and deaths than other drugs, and for the last several years, the drinking habits of Ottawa residents have been found to be consistently higher than the provincial average.

Given the emerging evidence regarding the significant burden of alcohol misuse in Ottawa, OPH will be strengthening efforts with a goal of reducing problem drinking and its associated harms. Utilizing the principles from the four-pillar approach, OPH will be focusing on three objectives:

- **Building resilience in children and youth** through the Healthy Babies, Healthy Children and Healthy Transitions programs
- **Promoting a culture of moderation** by raising awareness of Canada's Low Risk Alcohol Drinking Guidelines and expanding partnerships with local colleges and universities, such as Carleton University, University of Ottawa, La Cité Collégiale and Algonquin College
- **Increasing access to treatment and referral services** by promoting self-screening tools, reaching out to primary care practitioners to increase their capacity to provide brief screening interventions and improving contact with vulnerable populations, such as isolated seniors, through OPH programming

In support of these objectives, OPH will also work to increase community and partner awareness of the link between mental health and substance misuse. Collaborations

across education, housing and employment sectors, among others, will raise the profile of the burden of substance misuse and the role that healthy public policy can play in reducing risks and providing supportive environments.

RÉSUMÉ

Les troubles mentaux, la dépendance, la maladie, la violence, les blessures et le suicide peuvent avoir des effets dévastateurs sur les personnes, les familles et les communautés aux prises avec des problèmes d'abus de drogues et d'alcool. Toutefois, en plus des répercussions évidentes sur la santé et sur le plan social, l'abus d'alcool et de drogues, autres que les produits du tabac, constitue un fardeau économique important pour le Canada, qui consacrerait quelque 22,8 milliards de dollars par année à ces problèmes. À eux seuls, les soins de santé offerts aux personnes aux prises avec un problème lié à la consommation d'alcool compteraient pour 3,3 milliards de dollars.

Pour réduire les méfaits associés à l'abus d'alcool et de drogues, il faut adopter une approche générale. À l'instar de bon nombre d'organismes et de réseaux de la santé au Canada et à l'étranger, Santé publique Ottawa s'appuie sur quatre piliers pour offrir ses programmes et services : la prévention, la réduction des méfaits, le traitement et l'application de la loi. Dans le respect de l'ancienne Stratégie intégrée de lutte contre les drogues et la toxicomanie de la Ville d'Ottawa, Santé publique Ottawa appuie aussi la mobilisation communautaire pour s'assurer que les organismes de tous les secteurs travaillent de façon concertée pour répondre aux besoins des résidents d'Ottawa.

Bien que les répercussions graves de la consommation de médicaments sur ordonnance à des fins non médicinales et de la consommation de drogues illicites sur la santé et le plan social soient une source d'inquiétude, l'abus le plus courant dans la région d'Ottawa est celui de l'alcool. L'alcool est souvent consommé avec modération, toutefois, lorsqu'il est consommé en grande quantité, l'alcool peut faciliter les comportements à risque et être à l'origine de blessures. En outre, l'alcool est lié à un plus grand nombre de maladies et de décès que toute autre drogue. Depuis quelques années, la consommation d'alcool des résidents d'Ottawa est constamment plus élevée que la moyenne provinciale.

Compte tenu des récentes données sur le lourd fardeau de l'alcoolisme dans la région d'Ottawa, Santé publique Ottawa accentuera ses efforts pour réduire le problème de consommation d'alcool et les méfaits qui y sont associés. En utilisant l'approche à quatre piliers, Santé publique Ottawa se concentrera sur les trois objectifs suivants :

- **renforcer la résilience chez les enfants et les jeunes** grâce au programme Bébé en santé, enfants en santé et au programme Transitions saines;
- **promouvoir une culture de modération** en sensibilisant davantage le public aux *Directives de consommation d'alcool à faible risque du Canada* et en créant plus de partenariats avec les universités et collèges locaux, notamment l'Université Carleton, l'Université d'Ottawa, La Cité collégiale et le Collège Algonquin;
- **améliorer l'accès aux traitements et aux services d'aiguillage** en faisant la promotion des outils d'autoévaluation, en travaillant avec les fournisseurs de

soins primaires pour accroître leur capacité à fournir de brèves interventions de dépistage et en ayant plus de contacts avec les populations vulnérables, notamment les aînés isolés, grâce à ses programmes.

Afin d'atteindre ces objectifs, Santé publique Ottawa essaiera également de sensibiliser davantage les communautés et ses partenaires aux liens qui existent entre la santé mentale et l'abus d'alcool et de drogues. La collaboration entre les secteurs de l'éducation, du logement et de l'emploi, entre autres, permettra de mieux faire connaître le fardeau de l'abus d'alcool et de drogues et le rôle qu'une politique de santé publique peut jouer dans la réduction des risques et l'offre d'un milieu positif.

BACKGROUND

In response to an inquiry by Member Keeley in May 2012, and recognizing that providing programming and services to address alcohol and drug misuse requires a comprehensive strategy, Ottawa Public Health (OPH) undertook an epidemiological scan of substance misuse in Ottawa, a review of local programs and services as well as OPH's framework to address substance misuse (Documents 1, 2). This report provides a summary of these findings as well as proposed next steps.

Substance misuse, defined as the harmful use of any substance, including alcohol, illegal drugs, over-the-counter drugs and prescription drugs,¹ affects Ottawa residents across the lifespan and at all socioeconomic levels. Harmful effects, such as mental illness; addiction; infectious disease, such as HIV and Hepatitis C; chronic disease; violence; injury; and suicide (Document 1), can devastate individuals, families, and communities. Consequently, when assessing the impact of substance misuse it is important to take into consideration the prevalence of use, dependency on use, and the ability of the substance to cause harm.²

In addition to health and social impacts, the economic burden, excluding tobacco consumption, was estimated to be \$22.8 billion nationally in 2002.³ This figure accounts for the burden on services, such as health care, law enforcement, loss of productivity at work or home, and disability.

It is estimated that direct alcohol-related health care costs alone total \$3.3 billion, direct health care costs related to illegal drugs, excluding cannabis, are \$1.06 billion, and direct health care costs of cannabis are \$73 million.^{4, 5}

Prevalence of Substance Misuse in Ottawa

The most commonly misused substance in Ottawa is alcohol. When consumed in higher quantities, alcohol can facilitate high risk behaviours, and lead to injuries.⁶ In Ottawa, alcohol misuse leads to a greater burden of illness and deaths than other drugs. Almost 60 per cent (34,800) of Ottawa youth in grades 7 to 12 drink alcohol,⁷ and 28 per cent (182,000) of adults exceed the recommended weekly alcohol consumption limits set out by [Canada's Low Risk Alcohol Drinking Guidelines](#); a proportion that has been consistently higher than the provincial average since 2003.⁸ Nearly half of Ottawa adults – 45 per cent (309,100) – and 11 per cent (11,700) of seniors reported binge drinking, (drinking five or more drinks on one occasion) in the past year.⁹ In fact, 73 per cent

(38,100) of young adult males and 48 per cent (14,500) of young adult females reported heavy drinking, ¹⁰ defined as frequent binge drinking. Furthermore, 24 per cent (165,000) of all Ottawa adults reported heavy drinking, which is not only on the rise, but has also been consistently higher than the Ontario average since 2007.¹¹

Cannabis, the most commonly used illegal drug among youth and adults, was used by almost a quarter (14,600) of Ottawa youth and 13 per cent (85,700) of Ottawa adults in the past year.^{12,13}

Similar to youth across the province, 13 per cent (7,800) of Ottawa youth reported non-medical use of prescription opioid pain relievers, such as Percocet, Tylenol #3 and oxycodone, and 13 per cent (8,400) reported using an illegal drug other than cannabis, such as salvia, mushrooms, ecstasy and cocaine, at least once in the past year.¹⁴ Over 90 per cent of street-involved youth used non-injection drugs and 48 per cent used them daily. The most used non-injection drugs among street-involved youth in Ottawa are cannabis, ecstasy and cocaine, including crack.^{15, 16}

The overall number of people in Ottawa who inject drugs is estimated to be at least 1,200 and could be as high as 5,600.¹⁷ Eleven per cent of street-involved youth reported using injection drugs during the last year and three percent used them daily.¹⁸ Among all people who use injection drugs, morphine and other opioids, cocaine, and heroin are the more commonly used in our Ottawa.^{19,20} Many users of injection drugs also use cocaine (including crack) and cannabis. Though not as prevalent as alcohol, misuse of some drugs carries a higher risk of death or hospitalization (Document 1).

OPH Framework: Prevention, Harm Reduction, Treatment, Enforcement & Community Engagement

A comprehensive approach is needed to reduce the harms associated with alcohol and drug misuse. Like many health organizations and networks in Canada and around the world, following best practises (Document 1), the OPH framework to address substance misuse includes the four pillars of prevention, harm reduction, treatment and enforcement. In keeping with the City of Ottawa's former Integrated Drug and Addiction Strategy (IDAS), OPH also maintains a supporting foundation of community engagement to ensure that agencies from all sectors work together to address the needs of Ottawa residents.

Prevention

A cornerstone of the public health approach is to work upstream, by addressing issues before they occur. There is strong evidence that mental health promotion and programs that target early childhood and school age children can reduce substance misuse.²¹ Home visiting programs, such as Healthy Babies, Healthy Children (HBHC), work with expecting and new parents to increase their ability to cope with stresses and pressures, thereby reducing the more immediate risk of substance misuse among parents as well as the longer-term risk for their children.

In addition, the [OPH Mental Health Strategy for Children and Youth](#) (ACS2012-OPH-HPDP-006) is an important prevention initiative. The strategy aims not only to enhance

services for children and youth in crisis, but also to provide early identification of developmental, mental, social, and emotional issues. As part of this strategy, OPH is funding two agencies, Crossroads and Centre Psychosocial, to provide screening and referral to children at risk for mental health problems.

Another key component of OPH's mental health strategy is Healthy Transitions: a universal program that promotes positive mental health, resiliency and coping skills in youth. The program gives youth the confidence and ability to avoid or delay experimentation with substances and to recognize when help is needed for mental health issues. While both Healthy Transitions and HBHC programs are resource intensive for OPH to deliver, these programs, as well as the early screening of children, provide support at critical times in the lifespan where individuals may be at increased risk for mental health issues, and subsequent substance misuse. In 2012, approximately 4,000 people participated in the Healthy Transitions Program, 11,000 home visits were provided by HBHC and more than 60 children received intensive screening for developmental, mental, social, and emotional issues.

OPH prenatal education, parenting workshops and curriculum support in schools also increase awareness of the harms of substance misuse and the resources that are available to prevent and address substance misuse.

One way to assess the impact of approaches to prevent alcohol misuse in Ottawa is through the percentage of the population not in compliance with the Low-Risk Alcohol Drinking Guidelines, which is a Performance Indicator in the Public Health Accountability Agreement between the Ministry of Health and Long-Term and the Board of Health. Currently, OPH is:

- Actively disseminating the guidelines through various community locations
- Promoting awareness through a [web-based self screening program](#)
- Raising awareness of the harms associated with alcohol misuse through the “A Hangover is the Least of Your Worries” campaign ([English](#) and [French](#))
- Promoting brief screening practices with primary care practitioners

Other mechanisms to prevent substance misuse are aimed at reducing access. OPH is currently working with seniors' organizations, pharmacies and schools to encourage the return of unused medications for safe disposal at pharmacies, thereby reducing the availability of substances in the community. OPH has also strengthened prevention through support for healthy policies at various levels that reduce access to alcohol.

Finally, OPH strives to address the social determinants of health, which are significant factors in substance misuse. Basic supports –supportive environments, stable housing, education and adequate income– have been shown to reduce substance misuse. OPH's street health team works closely with outreach nurses from the community health centers, the Mission Primary Care Clinic and the Royal Ottawa Centre for Mental Health. Collectively, these nurses provide vital health services to Ottawa's most vulnerable population, many of whom have unstable housing, addictions and challenges due to substance misuse. The street health team works with shelter staff to help clients with housing, health and social concerns. One-on-one and group education sessions on

a variety of health topics, including addictions, are a key component of the street health team's work.

Harm Reduction

OPH works with local agencies, including police, paramedics, health care providers and OPH's harm reduction partners to provide services to reduce harms associated with drug misuse, including the Clean Needle and Syringe Program. This provincially mandated harm reduction program, which has been in operation in Ottawa since 1991, helps prevent the spread of communicable diseases, primarily HIV, hepatitis B and hepatitis C, and minimize the risks associated with substance misuse in society. The program provides access to sterile needles and other injection equipment for people who inject drugs; health education to promote safety, including safe disposal of used equipment; and referral to primary health services, addictions treatment services or social service agencies. The primary guidance document used by public health units across Ontario, *The Ontario Needle Exchange Programs: Best Practice Recommendations*,²² and a [literature review](#) conducted by OPH in 2008 ensure that the program uses interventions that have been shown to be effective.

In 2012, OPH's Site Clean Needle and Syringe Program conducted a needs assessment/program review to examine people's experience with harm reduction services in Ottawa, and to identify gaps as well as existing community strengths and capacities to address shortfalls. Preliminary findings indicate there is a need to explore opportunities to increase coordination among agencies that provide harm reduction services; increase involvement of peers (people with lived experience) in the design, delivery and evaluation of harm reduction services; strengthen integration with other sectors –housing, mental health, addictions, and treatment services– and continue to work with law enforcement on a shared set of objectives. OPH will continue to work with partners, and the community to inform programming that addresses needs of people who use drugs in Ottawa as well as the impacted communities. While OPH is monitoring the community discussion on safe injection sites, it has no plans to open such a site in Ottawa.

Recently, in response to local community need and in concert with provincial action taken at the Ministry of Health and Long-Term Care to reduce opiate overdose and deaths from overdose, OPH launched the Peer Overdose Prevention Program (POPP). POPP provides training to 'peers' (people who use opiates) on how to identify and prevent an overdose, and training to administer Naloxone. Naloxone is a medication that reverses the effects of opiates, such as heroin, morphine, fentanyl and oxycontin, and is an immediate intervention to address overdose symptoms until first responders arrive. Twenty-three Ottawa peers have received POPP training and Naloxone has been administered on two occasions.

OPH, in partnership with the Youth Services Bureau (YSB), is also reaching out to younger people who misuse drugs by providing a harm reduction drop-in three hours per week. Through this partnership, younger people, many of whom are homeless or street-involved, may access safer drug use information and counselling, STI testing, vaccinations and safer piercing education.

In addition to the harms associated with drug misuse, impaired driving can have fatal consequences. In 2012, the Ottawa Police issued 689 charges for alcohol and drug impaired driving. To reduce the possible injuries associated with impaired driving, OPH works closely with school boards, community partners, parent groups, and Safer Roads Ottawa partners to educate children and youth about the risks of impaired driving and compliance with related laws. This past year, OPH also promoted Operation Red Nose to its 10,000 Twitter followers to reduce harm due to drinking and driving.

Treatment and Referral

As individuals work to address their dependency on substances, they and their families often need the support of treatment services. There are a number of community partners that provide treatment services for youth and adults in Ottawa. OPH promotes awareness of, and increases access to drug treatment, addiction services and mental health services by [linking Ottawa residents to local services](#). However, similar to many urban centres, there is a need for more services. A total of 7,268 Ottawa residents were treated for substance misuse in 2011-12.²³

In 2008, the Ottawa School-based Substance Abuse Program was launched with funding from the four local schools boards, OPH, the Champlain Local Health Integration Network and United Way/Centraide. Annually, OPH contributes \$250,000 to the program, while the four school boards, in collaboration with Rideauwood Addiction and Family Services and Maison Fraternité, provide addiction and mental health counselling to youth in local high schools. By bringing prevention, education and treatment services into the school setting, the program makes services accessible and convenient for students. During the 2011-2012 school year, 1,500 students and 500 parents received counselling through this program and 500 teachers received training regarding youth addictions. An evaluation revealed positive impacts of the program, such as reduced substance misuse and improved health and well-being among participants, which reinforces the value of school-based prevention and treatment services.

As part of the OPH Child and Youth Mental Health Strategy and recognizing the link between mental health and addictions, OPH is funding YSB to enable their walk-in clinic to be open one extra day per week. OPH has also entered a new partnership with the Royal, CHEO and YSB to address the existing gap in recovery services for youth 13 to 18 years of age and their families who experience complex mental health challenges. A public health nurse is part of a team of clinicians who provide targeted parent education and support for healthy lifestyles.

Additionally, OPH contributes funding to Ottawa Inner City Health for enhanced nursing support to street-involved clients affected by substance misuse. These nurses provide STI and HIV testing, treatment and referral services, immunizations, tuberculosis screening, and infection prevention and control support, and facilitate access to services provided by other community partners.

Enforcement

OPH works with Ottawa Police Services on a number of activities related to illegal drug use, including the early identification and response to new trends in drug misuse. This partnership increases public awareness of the issues related to illegal drug use and helps ensure the safety of Ottawa residents.

Community Engagement

OPH plays a significant role in conducting and sharing surveillance data with partners on the subject of substance misuse to help inform program planning and meet community needs. In 2011, OPH released two surveillance reports, [Street Youth Surveillance in Ottawa 2011](#) (ACS2011-OPH-CP-0003) and the [Sexually Transmitted Infections and Sexual Health in Ottawa 2011](#) (ACS2011-OPH-CP-0004), which provide an overview of the issues that street-involved youth in Ottawa face as well as the prevalence of and risk factors for sexually-transmitted infections in Ottawa.

Also to help inform program planning as well as improve service delivery, the OPH Clean Needle and Syringe Program works closely with numerous key partners. OPH co-chairs the *Harm Reduction Joint Action Team*, comprised of a network of community health centres, needle-syringe and safer inhalation partners, AIDS and youth-service organisations, Ottawa Inner City Health, the Centre for Addictions and Mental Health, treatment agencies as well as researchers. Additionally, OPH engages a number of key stakeholders, including people who use drugs, community associations, business improvement areas, and law enforcement, through the *Needle Distribution and Retrieval Consultative Group*.

OPH also works closely with researchers from The Ottawa Hospital and Drug Users Advocacy League on a project to increase access to HIV testing and diagnosis for people who are using illegal substances, and to strengthen linkage to care and treatment for those who are living with HIV. Peers are trained to recruit and perform HIV Point-of-Care testing for participants from the drug using community as a way to increase the acceptability of HIV testing among this population and to improve access to health services among people who use drugs.

In addition, OPH is a member of a number of regional and provincial communities of practise, including the Eastern Ontario Substance Abuse Prevention Partnership, Ontario Health Promotion Alcohol Workgroup, Ontario Injury Prevention Manager Alliance and the Ontario Municipal Drug Strategy Network.

DISCUSSION

Over the next two years, OPH will continue to engage community partners and City departments in discussions about the information collected as part of the harm reduction client needs assessment/program review and on strategies to address problem drinking and substance misuse. OPH will work with community partners and City departments to ensure residents can access supports in the community, including support for mental health and addictions issues.

Given the emerging evidence regarding the significant burden of alcohol misuse in Ottawa, OPH will strengthen efforts to reduce problem drinking and its associated harms. Utilizing the principles from the four-pillar approach, OPH will be focusing on three objectives:

- **Building resilience in children and youth** through the HBHC and Healthy Transitions programs
- **Promoting a culture of moderation** by raising awareness of the Low Risk Alcohol Drinking Guidelines and expanding partnerships with local colleges and universities, such as Carleton University, University of Ottawa, La Cité Collégiale and Algonquin College
- **Increasing access to treatment and referral services** by promoting self-screening tools, reaching out to primary care practitioners to increase their capacity to provide brief screening interventions and by improving contact with vulnerable populations, such as isolated seniors, through OPH programming

As well, OPH will work with community partners to raise awareness of the link between mental health and substance misuse. Collaborations across education, housing and employment sectors, among others, will raise the profile of the burden of substance misuse and the role that healthy public policy can play in reducing risks and providing supportive environments.

CONSULTATION

OPH consulted a range of key stakeholders regarding OPH's Harm Reduction programming and injury prevention programming including needle and syringe program/harm reduction partner agencies; community members/peers; community groups; research experts; and Ottawa Police, school boards, treatment agencies, law enforcement, community health centres, post secondary institutions, internal partners and other community agencies.

Partners expressed their desire to see a continued approach to substance misuse in Ottawa that includes coordination between partner agencies, strengthened integration with other sectors, and a comprehensive approach that includes mental health; as well as the opportunity to expand involvement of peers (people with first-hand, lived experience) in the design, delivery and evaluation of programming.

LEGAL IMPLICATIONS

There are no legal impediments to the implementation of the report recommendations.

FINANCIAL IMPLICATIONS

There are no financial implications associated with this report.

TECHNOLOGY IMPLICATIONS

There are no technology implications related to this report.

BOARD OF HEALTH STRATEGIC PRIORITIES

The recommendations in this report support the Board of Health's 2011-2014 Strategic Priorities: B5 Reduce health risks related to preventable infectious and non-infectious diseases; and B1 Advance mental health promotion and services primarily for children and youth.

TERM OF COUNCIL PRIORITIES

The recommendations in this report support the 2010-2014 Term of Council Priorities under "Healthy and Caring Communities".

SUPPORTING DOCUMENTATION

[Document 1](#) – Backgrounder on harm caused by substance misuse, best practices for addressing substance misuse and history of Integrated Drug and Addictions Strategy in Ottawa

Document 2 – [Substance misuse in Ottawa: Technical Report](#) / [Abus d'alcool et de drogues à Ottawa : Rapport technique](#)

DISPOSITION

Ottawa Public Health will work with partners in the City to execute the recommendations in this report.

¹ Ontario Ministry of Health and Long-Term Care. Ontario Public Health Standards: Prevention of injury and substance misuse. 2012.

² Brands B, Sproule B, & Marshman JE. Drugs and Drug Abuse (Third ed.). Toronto: Addiction Research Foundation; 1998.

³ Rehm J, Baliunas D, Brochu S, Fishcer B, Gnam W, Patra J, et al. The Costs of Substance Abuse in Canada 2002 . 2006 Mar.

⁴ Rehm J, Baliunas D, Brochu S, Fishcer B, Gnam W, Patra J, et al. The Costs of Substance Abuse in Canada 2002 . 2006 Mar.

⁵ Thomas GB, & Davis CG. Comparing the Perceived Seriousness and Actual Costs of Substance Abuse in Canada: Analysis drawn from the 2004 Canadian Addiction Survey. Ottawa, ON: Canadian Centre on Substance Abuse; 2006.

⁶ Giesbrecht N, Wettlaufer A, April N, Asbridge M, Cukier S, Mann R, McAllister J, Murie A, Plamondon L, Stockwell T, Thomas G, Thompson K, Vallance K. Strategies to Reduce Alcohol-Related Harms and Costs in Canada: A Comparison of Provincial Policies. Toronto: Centre for Addiction and Mental Health; 2013.

-
- ⁷ Public Health Monitoring of Risk Factors in Ontario-OSDUHS 2011, Centre for Addiction and Mental Health.
- ⁸ Canadian Community Health Survey 2000-2011. Ontario Share File. Statistics Canada.
- ⁹ Canadian Community Health Survey 2011. Ontario Share File. Statistics Canada.
- ¹⁰ Canadian Community Health Survey 2011. Ontario Share File. Statistics Canada.
- ¹¹ Canadian Community Health Survey 2000-2011. Ontario Share File. Statistics Canada.
- ¹² Public Health Monitoring of Risk Factors in Ontario-OSDUHS 2011, Centre for Addiction and Mental Health.
- ¹³ Canadian Community Health Survey 2009/2010. Ontario Share File. Statistics Canada.
- ¹⁴ Public Health Monitoring of Risk Factors in Ontario-OSDUHS 2011, Centre for Addiction and Mental Health.
- ¹⁵ Bayoumi A, Strike C, et al. Report of the Toronto and Ottawa Supervised Consumption Assessment Study. Ontario; 2012.
- ¹⁶ Enhanced Street Youth Surveillance 2009, extracted by Public Health Agency of Canada and Ottawa Public Health May 9, 2012.
- ¹⁷ Bayoumi A, Strike C, et al. Report of the Toronto and Ottawa Supervised Consumption Assessment Study. Ontario; 2012.
- ¹⁸ Enhanced Street Youth Surveillance 2009, extracted by Public Health Agency of Canada and Ottawa Public Health May 9, 2012.
- ¹⁹ Enhanced Street Youth Surveillance 2009, extracted by Public Health Agency of Canada and Ottawa Public Health May 9, 2012.
- ²⁰ I-Track. Snapshot, Issue 4 (November 7, 2012), HIV & Hepatitis C Prevention Research Team, University of Ottawa.
- ²¹ Rempel, B. Youth Engagement Project: A Research Report and Recommendations for OPHA to Support Public Health Staff to Enhance Protective Factors, Increase Resiliency and Reduce Illicit Drug Use with Students in Grades 6-8 in Ontario. Toronto, ON: Ontario Public Health Association; 2009.

²² Strike, C., Leonard, L., Millson, M., Anstice, S., Berkeley, N. & Medd, E. Ontario Needle Exchange Programmes: Best Practice Recommendations 2006. Toronto: Ontario Needle Exchange Coordinating Committee.

²³ Drug and Alcohol Treatment Information System (DATIS) Central Database, provided January 25, 2013.