

## Community Managed Alcohol Programs in Canada: Overview of Key Dimensions and Implementation

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Abstract (250 words)

### Introduction and Aims

People with severe alcohol dependence and unstable housing are vulnerable to multiple harms related to drinking and homelessness. Managed Alcohol Programs (MAPs) aim to reduce harms of severe alcohol use without expecting cessation of use. There is promising evidence that MAPs reduce acute and social harms associated with alcohol dependence. The aim of this paper is to describe MAPs in Canada including key dimensions, and implementation issues.

### Methods

Thirteen Canadian MAPs were identified through the Canadian Managed Alcohol Program Study (CMAPS). Nine key informant interviews were conducted and analysed alongside program documents and reports to create individual case reports. Inductive content analysis and cross case comparisons were employed to identify six key dimensions of MAPs.

### Results

Community based MAPs have a common goal of preserving dignity and reducing harms of drinking while increasing access to housing, health and social services. MAPs are offered as both residential and day programs with differences in six key dimensions including eligibility criteria, housing, alcohol dispensing protocols, funding and money management, primary care services and clinical monitoring, and social and cultural programming.

### Conclusions

MAPs consist of four pillars with the alcohol intervention provided alongside housing interventions, primary care services, social and cultural programming. Availability of permanent housing and re-establishing social and cultural connections are central to recovery and healing goals of MAPs. Additional research regarding Indigenous and gendered approaches to program development as well as outcomes related to chronic harms and differences in alcohol management is needed.

**Key Words:** managed alcohol programs, harm reduction, homelessness, housing, alcohol related harms, severe alcohol use disorder.

## Introduction

Prevalence of substance use disorders among populations experiencing homelessness varies widely with estimates ranging from 8-58% (1, 2). A review of studies from Western countries estimated a mean prevalence of alcohol dependence among male homeless populations to be 37.9% with limited information on alcohol dependence for women experiencing homelessness. In Canada, more than 235,000 people experience homelessness nightly and illicit alcohol use has been identified as an issue of concern (3, 4). Illicit alcohol refers to consumption of non beverage alcohol (NBA) such as rubbing alcohol and hand sanitiser as well as consumption of alcohol in ways that are stigmatised and marginalised (4).

Severe alcohol use, consumption of illicit alcohol, and homelessness are rooted in complex and often structurally violent processes of colonisation, economic processes of capitalism, and policies of exclusion that are often invisible and implicated in the production of trauma, poverty, stress, anxiety, and problems with substance use (5-8). Substance use can be a response to trauma, poverty, abuse, and difficult life situations that contribute to homelessness as well as a way of coping with homelessness and ongoing trauma and difficulties (9-12).

The combination of severe alcohol use and homelessness often creates barriers to accessing and retaining housing, increasing health and social harms as well as service costs (13-15). Individuals may experience acute harms (e.g., alcohol poisoning and seizures), chronic health conditions (e.g., liver disease and cancers), poor mental health, social exclusion, vulnerability to assault and injury, and high rates of premature death (16, 17). NBA is often consumed when sources of beverage alcohol are unavailable and unaffordable (16, 18). NBA use is associated with increased harms due to higher ethanol content and in some cases harmful additives (19). Given that prior to entry into a MAP, clients often have multiple negative and

unsuccessful experiences with abstinence based treatment (20, 21) and find abstinence based goals often unrealistic or undesirable (22, 23), the need for harm reduction strategies is readily evident.

Evaluations of programs that tolerate alcohol consumption on site have found reductions in alcohol use and improved quality of life, with decreased use of more costly health and other services (24-28). In a study of a drop-in program in Switzerland, Grazioli et al. (29) found decreases in alcohol-related problems and consumption along with improvements in quality of life outcomes associated with tolerating drinking on site and an emphasis on safer drinking strategies. Thornquist et al. (28) compared three programs (two housing programs and a street-based case management program) that tolerated ongoing alcohol use and on-site client inebriation with no expectation for clients to reduce or eliminate use. They found that these programs resulted in decreased use of emergency, hospitals and detoxification services by people who were previously frequent users. In one Seattle Housing First program that places people directly into housing without the requirement of sobriety, researchers reported decreases in alcohol consumption and a significant decrease in costs associated with health and social services, such as emergency medical care and law enforcement (24).

Managed Alcohol Programs (MAPs) go beyond tolerating alcohol use to helping clients manage their alcohol use through the dispensing and administration of regulated doses of alcohol. Until recently, some of the only published research available on MAPs was a program evaluation conducted in Ottawa, Canada (30). These authors found improvements in quality of life, significant reductions in emergency service use and a decrease in alcohol-related harms for clients. However, this study did not have a control group and outside alcohol consumption was not recorded. More recently, our team conducted two pilot evaluations of MAPs in Vancouver

and Thunder Bay (31, 32). In both pilot evaluations, MAP clients were able to retain their housing during the course of the study with reductions in alcohol-related harms including decreased use of NBA, fewer withdrawal seizures, and improvements in relationships, feelings of safety, quality of life and well being. However, there were differences in some health outcomes, particularly liver function tests, between the two programs highlighting the need for attention to program eligibility criteria, individual tailoring of doses, and alcohol administration policies to manage outside drinking. Additional economic costing analyses were conducted for one program with savings between \$1.09 and \$1.21 per dollar invested (33). Currently, we are conducting a national study of MAPs in Canada, (Canadian Managed Alcohol Program Study, CMAPS).

Overall, there is very little written about MAPs in relation to their development and implementation. Our goals in this paper are to 1) outline the rationale for establishment of MAPs in Canada; 2) describe key dimensions of MAPs including program goals and eligibility, alcohol dispensing and administration, funding models and money management, accommodation, primary care services, and cultural and social dimensions; and 3) discuss implementation issues and future directions.

## **Methodology**

For this paper, data were obtained about 13 community based MAPs located in seven cities across Canada identified through CMAPS. Programs were included in the analysis if 1) an aim of the program was to reduce harms; 2) there was daily alcohol dispensing for clients; and 3) alcohol was provided as part of the program. Programs were excluded if 1) they were located in a

long-term care setting or hospital and 2) they tolerated alcohol use on site but did not administer alcohol or assist clients with alcohol management.

We drew on case study methodology to develop detailed program descriptions for nine MAPs. Case study designs draw on multiple sources of data including interviews, documents and web resources (34). Semi-structured interviews lasting from 60-90 minute were conducted either in-person or over the phone with lead staff members of nine programs. Interview questions focused on the history of the program, a description of different program components such as staffing and funding, alcohol administration protocols, programmatic policies and guidelines, and successes and challenges. The interviews were audio-recorded, transcribed and read twice by two team members. Techniques of inductive content analysis were used to systematically identify key elements and dimensions relevant to program development and implementation. Program policies, public presentations, reports, and websites (where available) were analysed to gather additional information for the case reports. Case reports were sent to program leads to review and ensure accuracy. Cross case analysis was used to highlight similarities and differences in programs. This research received ethical approval from the University of Victoria Research ethics committee (protocol #13-002) and approval from the individual sites where the research was conducted. For the remaining four MAPs, relevant information was accessed from publically available websites, presentation, and program reports to augment and expand understanding of the key dimensions.

## **Results**

### *Underlying Rationale for Establishment of MAPs in Canada*

Based on our review of the case reports and other publically available information, it is clear that Canadian MAPs emerged out of a need for a more compassionate approach to care for people vulnerable to the harms of severe alcohol dependence and homelessness. Canadian MAPs began organically, initially operating ‘under the radar’ to avoid potential public controversy. As described by Stockwell et al. (this issue), Toronto’s Seaton House, one of the first MAPs in Canada, was started following an inquiry into the tragic freezing deaths of three men on the streets of Toronto in 1996 (35, 36). The recommendations from that inquiry were to develop a 24-hour shelter program for men with severe alcohol dependence. In the early days of that program they started by storing personal alcohol for men so that they would stay inside overnight instead of ending up outside in the snow during freezing temperatures. This gradually evolved into inviting men to stay for breakfast and providing them with a glass of wine to ‘settle their shakes’ while encouraging them to eat. Daily alcohol administration started with one man being offered regular doses of alcohol throughout the day to prevent him from being picked up by the police for public intoxication.

On the street, people experiencing homelessness and severe alcohol dependence are vulnerable to violence and assaults. Tragic high profile incidents such as violent beatings of intoxicated individuals were shared by participants and identified as precursors to the establishment of MAPs in several cities. Participants stressed that this population is at extremely high risk for injury, victimisation and premature death with significant unmet health needs, poor quality of life and an ongoing battle to survive and find safe or suitable housing. Regardless of the community, participants voiced concerns about the extreme social exclusion, and marginalisation that people with severe alcohol disorder and homelessness face daily highlighting a lack of services for this population. They identified the negative impacts of binge

drinking and NBA use as well as lack of access to appropriate housing and services. As a result, many people with severe alcohol dependence and homelessness were revolving between emergency shelters, hospital emergency departments, in-patient beds, and jails, which participants identified as very costly to the surrounding community. Rationale for the establishment of MAPs included concerns related to illicit drinking, victimisation of individuals, economic inefficiencies, unmet health and housing needs, poor health, quality of life and premature death.

### *Key Elements and Dimensions of MAPs*

We identified six key dimensions of MAPs including program goals and eligibility criteria, funding and money management, alcohol administration, accommodation, primary care services, social and cultural dimensions.

#### *Program Goals and Eligibility*

The primary goal of the MAPs is to prevent and reduce harms of alcohol use, particularly harms associated with drinking NBA, binge drinking and consumption of alcohol in unsafe settings. Potential MAP clients have to meet program eligibility requirements and all programs have established criteria for eligibility. Based on interviews and program documents, common criteria for eligibility include a history of illicit drinking (including binge drinking and NBA use), chronic homelessness, frequent public intoxication or behavioural issues, multiple repeated attempts at abstinence treatment and/or high use of police or emergency department services. In eleven of the programs, clients are assessed for entry into the MAP by clinicians (nurse practitioners or physicians) on the basis of their drinking history and severity of alcohol related problems. In some cases, clinicians use validated screening tools such as the AUDIT to screen



for potential clients (18). In one peer-run program, the primary criterion for eligibility is based on regular attendance at a weekly meeting of people who self-identify as ‘drinkers’ with the heaviest drinkers given the option of joining a program that dispenses alcohol daily.

Eleven of the MAPs are open to all genders with two of the MAPs accepting men and trans-men only. One of the all-gender programs houses women in a separate wing of the building. All of the programs are for adults over the age of 18 or 19, depending on the legal drinking age in the province where the program is located. A few programs only accept clients who are over 30 or in one case over 55 years of age. Two programs were specifically developed for Indigenous peoples but open to non-Indigenous people who embrace Indigenous worldviews.

#### *Funding and Money Management*

The majority of the MAPs are funded through multiple sources including provincial or regional housing funds, special grants and provincial or regional health systems. Programs often face challenges in securing permanent core funding sufficient to cover ongoing operational costs. One program leader described how the MAP had shifted from a palliative to rehabilitative focus over time in order to access new funding opportunities and ensure sustainability of the program. In at least eight programs, clients cover part of the costs themselves, usually through deductions from their monthly government income assistance allowance to pay for either the cost of accommodation or the alcohol.

At least two programs provide some form of money management with staff helping to manage clients’ money on a case-by-case basis. MAP staff work with clients to budget their money for alcohol (in the cases where clients contribute to the cost of alcohol administration) and other necessities. When a program took complete responsibility for management of clients’

money, key informants viewed this as essential to mitigating the client's economic vulnerability. Conversely, at least one program did not require or offer money management as complete control over clients' finances is viewed as being inconsistent with client rights to self-determination and autonomy.

#### *Alcohol Dispensing and Administration*

Eight of the programs dispense and administer alcohol every 60 to 90 minutes over a period of 13 to 14 hours usually up to a maximum of 11-12 doses per day usually between the hours of 07:30 am and 11:00 pm. These eight programs have protocols to assess intoxication and a client may be refused a drink if they are assessed as being overly intoxicated. In at least three of these eight programs, there are policies that require clients to be on site a minimum of 30-60 minutes prior to administration of the next drink. These policies are often in place as a means of discouraging clients from consuming additional alcohol outside the program and thereby contributing to harms of increased consumption and public intoxication.

The majority of these eight programs provide white or red wine (average of 12% alcohol by volume) with clients generally receiving 5-6 ounces at a time. Some programs provide a 'special blend' by diluting the wine with juice or water. As well, some MAPs offer alternatives such as spirits or beer and most allow clients to purchase their preferred beverage to be dispensed at special times by program staff. While these MAPs have a standardised alcohol administration protocol, programs do tailor dosing to meet individual needs, especially for those who are prone to withdrawal symptoms or seizures or who are taking medications that may interact with alcohol. For example, the first dose clients may receive in the morning can be a higher volume

(e.g. seven ounces of wine) as a way to minimise withdrawal symptoms. Limited information and analysis is available on gender differences in dosing.

The other five programs dispense alcohol to clients on a daily rather than hourly basis with clients having greater control over administration and management of their alcohol. In these five programs, individuals are usually provided with a ration of alcohol up to three or four times per day. The dosing in these MAPs is often highly individualised with a wide range of dosages. For example, a MAP client may be rationed 2-3 beers three times per day or may receive 2-3 litres of wine once per day which they then administer themselves.

At least two of the 13 MAPs brew their own alcohol. Other programs obtain their alcohol from sources such as a local wine store where alcohol can be brewed on site or by a vintner at a reduced cost. In at least one program, MAP clients are involved in brewing the alcohol as part of program activities designed to draw on the strengths and knowledge of clients. Where alcohol is brewed within the program, higher strength alcohol is generally produced compared to that obtained from commercial sources.

#### *Food and Accommodation*

MAPs include the provision of food services usually in the form of 1-3 meals per day. MAP clients may be involved in food preparation and/or clean up. Eleven of the 13 MAPs provide some type of accommodation either in a shelter, transitional, or permanent supportive housing. Two of the MAPs are located in emergency shelters that act as feeder programs into more permanent MAP housing or supportive housing where clients manage their own alcohol. Three of the residential MAPs operate in a transitional housing setting similar to a rooming house with individuals sharing rooms and communal spaces. Tenure in transitional programs is

not considered permanent. In at least one transitional program, program goals focus on shifting from staff- to self-managed administration of alcohol in order to facilitate eventual moves into other types of housing settings. For those in programs that provide transitional housing, clients who no longer need or are no longer eligible to be on the MAP will not necessarily retain their housing.

Six of the residential programs are located in permanent supportive housing where the MAP is integrated into the housing setting alongside other programming. For example, one program is in an 80-unit supportive housing complex in which a dozen units are permanently designated for people in the MAP and the remaining units are low-income rentals occupied by singles, couples and families including single mothers. When located in permanent forms of housing, tenure in housing is not tied to participation in the MAP and clients usually will not lose their housing if they are no longer on the MAP.

Two of the 13 MAPs operate as day programs only, and no accommodation is available on site. However, the day programs do provide support to clients to both find and keep housing. However, MAP clients may remain homeless if suitable housing is not available or cannot be retained. Depending on the location of their housing, clients may require transportation support to access the MAP. In one day-program alcohol is delivered to client homes to facilitate access.

#### *Primary Care Services*

MAPs emphasise and establish linkages to primary care services with services located on site or embedded within a program's structure. For example, one MAP employs nurses who work on site and other MAPs have regularly scheduled visits from physicians or nurse practitioners from local primary care clinics. One program had a primary care clinic staffed by a

doctor and nurses on site specifically for MAP clients. Home care nurses provide care on site in at least three programs. Thus, MAPs often increase access to primary care for a population that may have unmet primary care needs and limited access to primary care services.

Clinical monitoring was a prominent feature of eight of the MAPs with health professionals being part of the core team involved in monitoring health through liver function tests and overall alcohol consumption as part of ongoing and regular assessments. In the program with a primary care clinic on site, clients were supported and encouraged to seek care when needed, but it was not a requirement of the program to access care or be involved in clinical monitoring.

#### *Social and Cultural Dimensions*

Program leaders identified the importance of activities to combat boredom and to introduce activities other than drinking for the benefit of residents. Depending on availability, clients are encouraged to access cultural and social activities both inside and outside of the programs. These activities may include life skills training, craft activities, music programs, or other forms of social interaction based on resident needs and interests. Some programs incorporate exercise programs and other forms of active recreation such as walking or swimming to increase clients' activity levels and to counter potentially unhealthy weight gain that may occur after stabilisation in the MAP.

In Canada, the health and well being of Indigenous peoples is severely impacted by colonisation through dispossession of lands and displacement associated with the establishment of reserves, residential schools and Indian hospitals (37, 38). At least five of the MAPs had incorporated activities on site or facilitate access to community programming provided by

Indigenous communities/organisations outside of the MAP. Activities such as beading, cooking traditional foods and meal sharing were incorporated into several programs. Elders were present on site in at least three programs and in addition to working with individual clients; they led ceremonies involving drumming, prayer and the presence of sacred Indigenous medicines that are sometimes burned or smudged. Indigenous knowledge and culture were central to the development of at least two programs and MAP was incorporated as an element of these programs. Indigenous knowledge is based on a diversity of Indigenous cultures and worldviews in Canada.

The importance of peer or client input into the development and delivery of MAPs was identified by key informants. Peers have experiential wisdom borne of living in particular social circumstances that generate an orientation to the world not readily available to others without similar life experiences (39). For the majority of programs, this input occurred either informally through program discussions and consultations or more formally through regularly scheduled resident advisory meetings. Feedback from clients was used to improve programming. At least two programs employed peer workers who had personal experience with alcohol dependence and homelessness as part of their staff team. One MAP had been developed by peers for peers and was completely peer-run. This program offered a set of unique activities including peer-led sessions on drinkers' rights, opportunities to participate in the production of alcohol for the MAP, and the option of doing paid outreach to fellow drinkers as part of a street-based outreach team.

## **Discussion**

Harm reduction is a pragmatic response that accepts substance use as a feature of society, prevents harms of use, preserves dignity and meaningfully engages people who use substances in policy and programs rather than focusing on cessation of use or behaviours (40). In Canada, MAPs have evolved as an alcohol harm reduction intervention that provides clients with regularly dispensed and in some cases administered sources of beverage alcohol typically alongside accommodation and/or other programming to mitigate the harms of severe alcohol use and homelessness. MAPs aim to decrease or prevent alcohol related harms by reducing heavy episodic drinking, use of NBA, public intoxication, drinking in unsafe settings, and high costs associated with police and emergency services while increasing access to primary care and other health and social services. As such, community MAPs generally consist of four pillars: the alcohol intervention, a housing or accommodation intervention, primary care services, social and cultural programming. MAPs may be rooted in and/or incorporate biomedical, practical, and/or Indigenous knowledge.

MAPs aim to provide a more compassionate response in the context of severe alcohol use and homelessness pushing back against the dominant narrative of abstinence-based treatment as the only path to recovery (41). Through the provision of housing support and alcohol management, MAPs work to mitigate harms by supporting residents to change their pattern of use by spacing drinks over time, consuming alcohol in a safer setting, replacing NBA with beverage alcohol, and providing opportunities for social and cultural reconnection. MAPs can contribute to recovery goals for individuals without the requirement of abstinence (41).

Funding for MAP programs was often from multiple sources and the need for stable funding for housing, the alcohol intervention, and programming is critical. Housing is a central program component but in some cases housing is dependent on continuing receipt of the alcohol

intervention. Consideration can and should be given to providing clients with access to permanent housing that is not tied to ongoing participation in a MAP. This is important so that individuals are not redirected into homelessness should they leave or no longer need the program. Given the wealth of evidence for Housing First, explicitly incorporating MAPs as part of Housing First programs could enhance outcomes for people with severe alcohol dependence and homelessness (42-44).

A defining aspect of MAPs is the dispensing of alcohol, which is a known toxic substance and at high doses is associated with substantial morbidity and premature mortality (45-47). This is unlike harm reduction strategies for illegal drugs that aim to reduce harms by altering the mode and setting of drug administration without necessarily providing the drug (e.g., provision of safer use supplies, supervised consumption). Early findings from our pilot studies suggest that protocols are needed to ensure MAPs do not contribute to overall increases in consumption and chronic alcohol harms (32). Program leaders identified the importance of addressing and dealing with issues of drinking outside the programs to ensure that harms are not increased. Although programs do not require elimination of alcohol use, there can still be an openness for residents who wish to pursue abstinence or take “liver holidays” consisting of short assisted breaks from alcohol to reduce the likelihood of developing alcohol-related liver disease (48). As well, clinical monitoring in collaboration with clients can contribute to ongoing assessment of chronic harms. Further evaluation of long-term chronic harms of MAPs and the effectiveness of self-management versus staff-management of alcohol is needed.

Harm reduction, as an approach, has emerged from both top down public health approaches to reduce harms of drug use and a grassroots bottom up social movement (49). Engaging peers or people with lived experience in policy making, research, programming, and



practice is a fundamental principle of harm reduction globally(40, 50). There are varying degrees of peer or resident involvement in the design and development of MAPs included in this overview. In top down approaches, programs engage clients formally and informally to gain their input. A few programs have peer support workers, but only one program to our knowledge was both initiated and run by peers. In other research, people who use illicit alcohol have identified concerns about restrictive rules in community residential MAPs such as hourly dosing, drinking on site and management of alcohol by staff (51). At this time, there is a lack of knowledge about impacts and outcomes of peer-run alcohol harm reduction programs. Additionally, employing a gender lens and engaging women in program development is important. The needs of female clients may not adequately be met by existing MAPs that were developed predominately for male clients without attention to issues such as sexualised violence.

Program leaders specifically recognised the need to provide relevant and appropriate cultural interventions for Indigenous clients. However, few programs were founded on Indigenous worldviews and the incorporation of local Indigenous perspectives and knowledge as part of program foundations was not always readily evident. As MAPs continue to evolve and new ones are established, the importance of Indigenous informed and led programs that foreground the role of culture and cultural interventions as part of healing and recovery cannot be overemphasised (52). Indigenous approaches to treatment focus on wellness of mind, body, spirit and emotion going beyond biomedical approaches to health (53). In CMAPS, in collaboration with Indigenous partners, we are specifically investigating the importance of Indigenous perspectives and approaches in the development and delivery of MAPs.

## **Limitations**

As noted previously, we provide an overview of community MAPs in Canada and our overview does not include programs offered in hospitals or long-term care settings. Also, due to the tendency of some MAPs to operate under the radar in order to avoid potential controversy or community backlash, this review did not capture all programs currently running in Canada. Further information about four of the programs was captured from public documents and reports. It is important to note that MAPs are continuously evolving so some descriptions of protocols and programming may change over time and are only accurate at the time of writing. Further research is required to examine the different types of MAPs and assess the effectiveness of different approaches and program components most conducive to reducing alcohol-related harm for this population.

## **Conclusion**

MAPs are an alcohol harm reduction intervention that fill an existing gap by preventing or reducing harms of severe alcohol dependence associated with NBA use, heavy episodic drinking and drinking in unsafe, street-based settings. MAPs consist of an alcohol intervention, accommodation, primary care services, social and cultural programming. All MAPs aim to reduce harms of severe alcohol use at the intersection of poverty and homelessness but have different approaches to program development and implementation drawing on biomedical, practical and Indigenous knowledge. Given the provision of alcohol as a key dimension, specific attention is needed to volume of alcohol consumed and ongoing assessment of long-term chronic harms. Housing is a critical program feature and should be available regardless of the need for the alcohol intervention. MAPs require attention to social and cultural elements that recognise the unique history, culture and gender of clients. Further research is needed on Indigenous

MAPs, the role of peers, programs for women as well as on long-term chronic harms and outcomes associated with self- versus staff- management of alcohol.

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**Conflicts of Interest**

We declare receipt of funding from Shelter House, Thunder Bay and Vancouver Coastal Health for preliminary pilot research. This was a small proportion of all funds received for this project and these particular funds were fully spent before the initiation of the main project. TS declares (i) receipt of research funds from Systembolaget, the Swedish government retail alcohol monopoly, for a study of the public health impacts of its policies (ii) receipt of travel expenses from IOGT-NTO, the Swedish Temperance Foundation to attend an annual research meeting. TS and BP declare receipt of consulting fees from Edmonton Managed Alcohol Working Group for research expertise in the development and conduct of an environmental scan of MAPs in Edmonton.

## References

1. Fazel S, Khosla V, Doll H, Geddes J. The prevalence of mental disorders among the homeless in western countries: systematic review and meta-regression analysis. *PLoS Med.* 2008;5(12):e225.
2. Fazel S, Geddes JR, Kushel M. The health of homeless people in high-income countries: descriptive epidemiology, health consequences, and clinical and policy recommendations. *Lancet.* 2014;384(9953):1529-40.
3. Gaetz S, DeJ E, Richter T, Redman M. *The State of Homelessness in Canada 2016.* Toronto: Canadian Observatory on Homelessness Press; 2016.
4. British Columbia Center for Disease Control. *Illicit alcohol in British Columbia: Results from a qualitative research* Vancouver, BC: British Columbia Centre for Disease Control; 2013.
5. Farmer P. *On Suffering and Structural Violence: A View from Below.* Race/Ethnicity: Multidisciplinary Global Contexts. 2009;3(1):11-28.
6. Alexander BK. *The roots of addiction in free market society.* Vancouver, BC: Canadian Centre for Policy Alternatives; 2001.
7. Alexander BK. *The globalisation of addiction: A study in poverty of the spirit.* Don Mills, ON: Oxford University Press; 2008.
8. Reading CL. Structural determinants of Aboriginal peoples' health. In: Greenwood M, de Leeuw S, Lindsay NM, Reading C, editors. *Determinants of Indigenous Peoples' Health in Canada: Beyond the Social.* Toronto: Canadian Scholars' Press Inc.; 2015. p. 3-15.
9. Feng C, DeBeck K, Kerr T, Mathias S, Montaner J, Wood E. Homelessness independently predicts injection drug use initiation among street-involved youth in a Canadian setting. *J Adolesc Health.* 2013;52(4):499-501.
10. Mate G. *In the realm of hungry ghosts: Close encounters with addiction.* Toronto: Knopf Canada; 2008.
11. McVicar D, Moschion J, van Ours JC. From substance use to homelessness or vice versa? *Soc Sci Med.* 2015;136:89-98.
12. Hamilton AB, Poza I, Washington DL. "Homelessness and Trauma Go Hand-in-Hand": Pathways to Homelessness among Women Veterans. *Womens Health Issues.* 2011;21(4):S203-S9.
13. Larimer M, Malone D, Garner M, Atkins D, Burlingham B, Lonczak H. Health care and public service use and costs before and after provision of housing for chronically homeless persons with severe alcohol problems. *JAMA.* 2009;301.
14. Turnbull J, Muckle W, Masters C. Homelessness and Health. *Can Med Assoc J.* 2007;177(9):1065-6.
15. Muckle W, Oyewumi L, Robinson V, Tugwell P, ter Kuile A. *Managed Alcohol as a Harm Reduction Intervention for Alcohol Addiction in Populations at High Risk for Substance Abuse.* The Cochrane Library. 2008(4).
16. Stockwell T, Williams NS, Pauly BM. Working and Waiting: Coping responses of homeless problem drinkers when they cannot afford alcohol. *Drug and Alcohol Rev.* 2012;31(6):823-4.
17. McCormack RP, Hoffman LF, Norman M, Goldfrank LR, Norman EM. Voices of Homeless Alcoholics Who Frequent Bellevue Hospital: A Qualitative Study. *Ann Emerg Med.* 2015;65(2):178-86.e6.
18. Fichter MM, Quadflieg N. Course of Alcoholism in Homeless Men in Munich, Germany: Results from a Prospective Longitudinal Study Based on a Representative Sample. *Subst Use Misuse.* 2003;38(3-6):395-427.
19. Rehm J, Kanteres F, Lachenmeier D. Unrecorded consumption, quality of alcohol and health consequences. *Drug Alcohol Rev.* 2010;29.

20. Wenzel SL, Burnam MA, Koegel P, Morton SC, Miu A, Jinnett KJ, et al. Access to inpatient or residential substance abuse treatment among homeless adults with alcohol or other drug use disorders. *Med Care*. 2001;39(11):1158-69.
21. Tucker JS, Wenzel SL, Golinelli D, Zhou A, Green HD. Predictors of substance abuse treatment need and receipt among homeless women. *J Subst Abuse Treat*. 2011;40(3):287-94.
22. Grazioli VS, Collins SE, Daepfen J-B, Larimer ME. Perceptions of twelve-step mutual-help groups and their associations with motivation, treatment attendance and alcohol outcomes among chronically homeless individuals with alcohol problems. *Int J Drug Policy*. 2015;26(5):468-74.
23. Pauly B, Gray E, Perkin K, Chow C, Vallance K, Kryswaty B, et al. Finding safety: a pilot study of managed alcohol program participants' perceptions of housing and quality of life. *Harm Reduct J*. 2016;13:15.
24. Collins SE, Malone DK, Clifasefi SL, Ginzler JA, Garner MD, Burlingham B, et al. Project-based Housing First for chronically homeless individuals with alcohol problems: Within-subjects analyses of 2-year alcohol trajectories. *Am J Public Health*. 2012;102(3):511-9.
25. Mackelprang JL, Collins SE, Clifasefi SL. Housing First is associated with reduced use of emergency medical services. *Prehosp Emerg Care*. 2014;18(4):476-82.
26. Collins SE, Clifasefi SL, Dana EA, Andrasik MP, Stahl N, Kirouac M, et al. Where harm reduction meets housing first: exploring alcohol's role in a project-based housing first setting. *Int J Drug Policy*. 2012;23(2):111-9.
27. Clifasefi SL, Malone DK, Collins SE. Associations between criminal history, Housing First exposure and jail outcomes among chronically homeless individuals with alcohol problems. *Alcoholism*. 2012;36:360A-A.
28. Thornquist L, Biros M, Olander R, Sterner S. Health care utilization of chronic inebriates. *Acad Emerg Med*. 2002;9(4):300-8.
29. Grazioli V, Collins SE, Paroz S, Graap C, Daepfen JB. Six-month outcomes among socially marginalized alcohol and drug users attending a drop-in centre allowing alcohol consumption. *Int J Drug Policy*. 2017;41:65-73.
30. Podymow T, Turnbull J, Coyle D, Yetisir E, Wells G. Shelter-based managed alcohol administration to chronically homeless people addicted to alcohol. *Can Med Assoc J*. 2006;174(1):45-9.
31. Vallance K, Stockwell T, Pauly B, Chow C, Gray E, Kryswaty B, et al. Do managed alcohol programs change patterns of alcohol consumption and reduce related harm? A pilot study. *Harm Reduct J*. 2016;13:13.
32. Stockwell T, Pauly BM, Chow C, Vallance K, Perkin K. Evaluation of a managed alcohol program in Vancouver, BC: Early findings and reflections on alcohol harm reduction. Victoria, British Columbia: University of Victoria; 2013.
33. Hammond K, Gagne L, Pauly BM, Stockwell T. A cost-benefit analysis of a Canadian Managed Alcohol Program. Victoria, BC: Centre for Addictions Research of British Columbia; 2016.
34. Yin R. Case study research: Design and methods. 4th ed. Thousand Oaks: Sage; 2009.
35. Svoboda T. Message in a bottle: Wet shelters embody true harm reduction approach. *Cross Curr*. 2009(20).
36. Svoboda T. Measuring the 'reduction' in a harm reduction program for homeless men experiencing harms related to alcohol abuse and problem behaviors [Unpublished Doctoral Dissertation]: University of Toronto; 2006.
37. Patrick C. Aboriginal homelessness in Canada: A literature review Toronto: Canadian Homelessness Research Network Press; 2014.
38. Reading C. The structural determinants of Aboriginal Peoples' health In: Greenwood M, De Leeuw S, Lindsay NM, Reding C, editors. Determinants of Indigenous Peoples' health in Canada: Beyond the Social. Toronto: Canadian Scholars' Press; 2015.

39. Popay J, Williams G, Thomas C, Gattrell A. Theorizing inequalities in health: The place of lay knowledge. In: Hofrichter R, editor. *Health and social justice: Politics, ideology, and inequity in the distribution of disease*. 1st ed. San Francisco: Jossey-Bass; 2003. p. 385-409.
40. International Harm Reduction Association. What is harm reduction? 2015 [Available from: <http://www.ihra.net/what-is-harm-reduction>].
41. Evans J, Semogas D, Smalley J, Lohfeld L. "This place has given me a reason to care": Understanding 'managed alcohol programs' as enabling places in Canada. *Health Place*. 2015;33(118-124).
42. Woodhall-Meinik JR, Dunn JR. A systematic review of outcomes associated with participation in Housing First programs. *Housing Studies*. 2015:1-18.
43. Palepu A. Housing first improves residential stability in homeless adults with concurrent substance dependence and mental disorders. 2013.
44. Kertesz SG, Crouch K, Milby JB, Cusimano RE, Schumacher JE. Housing first for homeless persons with active addiction: Are we overreaching? *The Milbank Quarterly*. 2009;87(2):495-534.
45. Parrish KM, Higuchi S, Dufour MC. Alcohol consumption and the risk of developing liver cirrhosis: Implications for future research. *J Subst Abuse*. 1991;3(3):325-35.
46. Lim SS, Vos T, Flaxman AD, Danaei G, Shibuya K, Adair-Rohani H, et al. A comparative risk assessment of burden of disease and injury attributable to 67 risk factors and risk factor clusters in 21 regions, 1990-2010: a systematic analysis for the Global Burden of Disease Study 2010. *Lancet*. 2012;380(9859):2224-60.
47. Kamper-Jorgensen M, Gronbaek M, Tolstrup J, Becker U. Alcohol and cirrhosis: dose-response or threshold effect? *J Hepatol*. 2004;41(1):25-30.
48. Pauly BM, Stockwell T, Chow C, Gray E, Krysovaty B, Vallance K, et al. Towards alcohol harm reduction: preliminary results from an evaluation of a Canadian managed alcohol program. Victoria, BC: Centre for Addictions Research of British Columbia; 2013.
49. Collins SE, Clifasefi SL, Logan D, Samples L, Somers J, Marlatt A. Current status, historical highlights, and basic principles of harm reduction. In: Marlatt A, Larimer M, Witkiewitz K, editors. *Harm Reduction: Pragmatic Strategies for Managing High-risk Behaviors*. 2nd Edition ed. New York, NY: Guilford Publications; 2012. p. 3-35.
50. Greer AM, Luchenski SA, AA A, Lacroix K, C B, JA. B. Peer engagement in harm reduction strategies and services: a critical case study and evaluation framework from British Columbia, Canada. *BMC Public Health*. 2016;16:452.
51. Crabtree A. It's powerful to gather : a community-driven study of drug users' and illicit drinkers' priorities for harm reduction and health promotion in British Columbia. Vancouver, BC, Canada University of British Columbia; 2015.
52. Rowan M, Poole N, Shea B, Gone JP, Mykota D, Farag M, et al. Cultural interventions to treat addictions in Indigenous populations: findings from a scoping study. *Subst Abuse Treat Pr*. 2014;9.
53. Dumont J, National Native Addictions Partnership Foundation. Honoring our strengths: Culture as intervention in addictions treatment reference guide. Bothwell, ON: University of Saskatchewan: Canadian Institutes of Health Research 2014.