Managed Alcohol Programs: Impacts and Outcomes

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University of Victoria | Canadian Institute for Substance Use Research | Institut canadien de recherche sur l'usage de substances

CMAPS Funding (2011-2021)
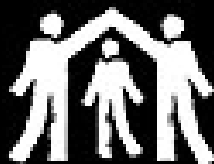
ALCOHOL-RELATED HARMS IN CANADA
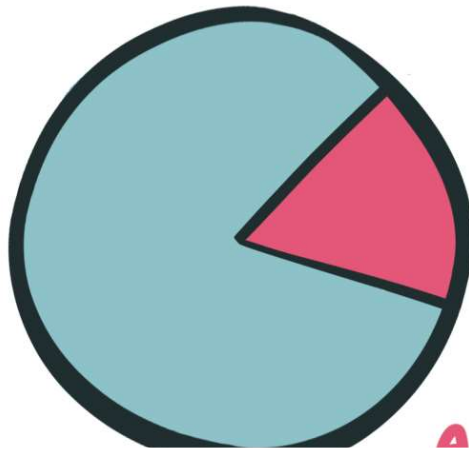
→ **18%** OF CANADIANS AGED 15 OR OLDER HAVE HAD **ALCOHOL USE DISORDER** DURING THEIR LIFETIME

1 IN 5 CANADIANS AGED **12** OR OLDER DRINK IN **EXCESS** OF RECOMMENDED DAILY OR WEEKLY LIMITS

↑ **34%** INCREASE IN **HOSPITALIZATION RATES**

Alcohol Harm Reduction

Pricing x 3

Physical Availability

Drinking and Driving

Marketing and Advertising

Minimum Legal Drinking Age

SBIR

Server Training and Management
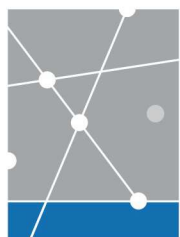
Provincial Clinical Guidelines:
High-Risk Drinking and
Alcohol Use Disorder

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Low Risk Alcohol Drinking Guidelines

Your limits

Reduce your long-term health risks by drinking no more than:

2 **3**

- 10 drinks a week for women, with no more than 2 drinks a day most days

- 15 drinks a week for men, with no more than 3 drinks a day most days

Plan non-drinking days every week to avoid developing a habit.
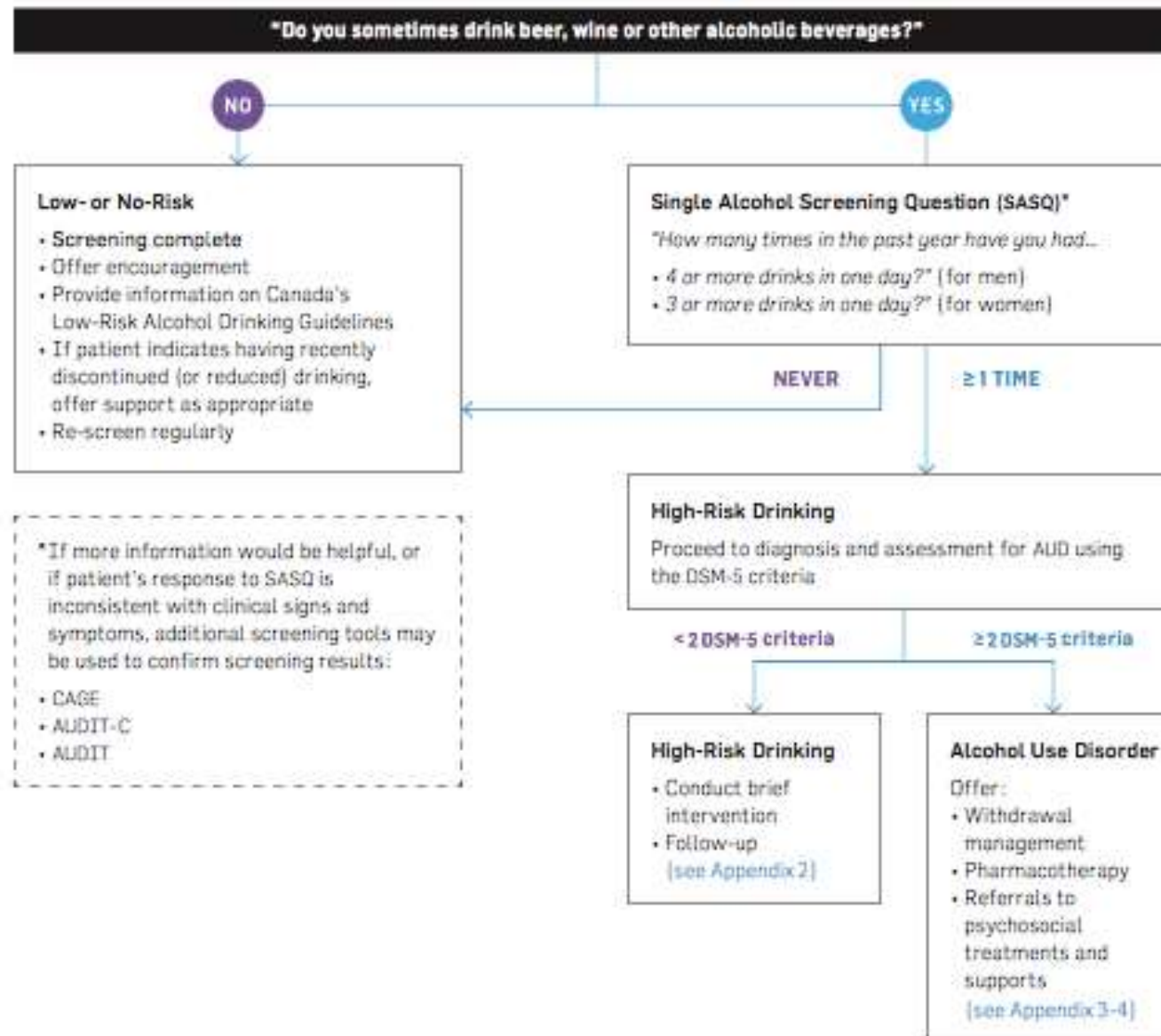
Table 1 Summary of Guideline Recommendations[a]

		Quality of Evidence	Strength of Recommendation
Screening and Brief Intervention			
1	Clinicians should provide education about Canada's Low-Risk Alcohol Drinking Guidelines to all adult and youth patients.	LOW	STRONG
2	All adult and youth patients should be screened annually for alcohol use above low-risk limits.	MODERATE	STRONG
3	All patients who are drinking alcohol above low-risk limits but do not have an alcohol use disorder (AUD)[b] should receive a brief counselling intervention.	MODERATE	STRONG
Withdrawal Management			
4	Clinicians should use the Prediction of Alcohol Withdrawal Severity Scale (PAWSS) to assess the risk of severe complications of alcohol withdrawal in patients with AUD, in order to select the most appropriate withdrawal management pathway.	MODERATE	STRONG
5	Patients at low risk of severe complications of alcohol withdrawal (PAWSS<4) who have no other concurrent conditions that would require inpatient management should be offered outpatient withdrawal management.	HIGH	STRONG
6	Clinicians should consider prescribing non-benzodiazepine medications, such as gabapentin, carbamazepine, or clonidine, for the outpatient management of patients at low risk of severe complications of alcohol withdrawal.	MODERATE	STRONG
7	Patients at high risk of severe complications of withdrawal (PAWSS≥4) should be referred to an inpatient facility (i.e., withdrawal management facility or hospital) where they can receive a benzodiazepine treatment regimen under close observation, and emergency care can be administered immediately if needed.	HIGH	STRONG
8	All patients who complete withdrawal management should be connected to continuing AUD care.	LOW	STRONG
Continuing Care			
9	Adult patients with moderate to severe AUD should be offered naltrexone or acamprosate as a first-line pharmacotherapy to support achievement of patient-identified treatment goals. A. Naltrexone is recommended for patients who have a treatment goal of either abstinence or a reduction in alcohol consumption. B. Acamprosate is recommended for patients who have a treatment goal of abstinence.	MODERATE	STRONG
10	Adult patients with moderate to severe AUD who do not benefit from, have contraindications to, or express a preference for an alternative to first-line medications, can be offered topiramate or gabapentin.	MODERATE	STRONG
11	Clinicians should provide motivational interviewing-based counselling to all patients with mild to severe AUD to support achievement of treatment goals.	MODERATE	STRONG
12	All patients with mild to severe AUD can be provided with information about and referrals to specialist-led psychosocial treatment interventions.	MODERATE	STRONG
13	All patients with mild to severe AUD can be provided with information about and referrals to peer-support groups and other recovery-oriented services in the community.	LOW	STRONG

[a] The GRADE approach[c] was used to assess the quality of evidence (possible categories include: high, moderate, low, or very low) and strength of recommendation (possible categories include: strong or weak). Please refer to the Development and Approval of Recommendations section for more information on how the GRADE criteria were applied and an explanation of the quality of evidence and strength of recommendation scores that have been assigned.

[b] As per DSM-5 Diagnostic Criteria for Alcohol Use Disorder and Severity (Mild, Moderate, Severe)[d]

https://www.bccsu.ca/alcohol-use-disorder/

Figure 1   Alcohol Use Screening Pathway for Adult Patients

"Do you sometimes drink beer, wine or other alcoholic beverages?"

NO → **Low- or No-Risk**

- Screening complete
- Offer encouragement
- Provide information on Canada's Low-Risk Alcohol Drinking Guidelines
- If patient indicates having recently discontinued (or reduced) drinking, offer support as appropriate
- Re-screen regularly

YES → **Single Alcohol Screening Question (SASQ)***

"How many times in the past year have you had...

- 4 or more drinks in one day?" (for men)
- 3 or more drinks in one day?" (for women)

NEVER → (to Low- or No-Risk)

≥1 TIME →

High-Risk Drinking

Proceed to diagnosis and assessment for AUD using the DSM-5 criteria

<2 DSM-5 criteria → **High-Risk Drinking**

- Conduct brief intervention
- Follow-up

(see Appendix 2)

≥2 DSM-5 criteria → **Alcohol Use Disorder**

Offer:

- Withdrawal management
- Pharmacotherapy
- Referrals to psychosocial treatments and supports

(see Appendix 3-4)

*If more information would be helpful, or if patient's response to SASQ is inconsistent with clinical signs and symptoms, additional screening tools may be used to confirm screening results:

- CAGE
- AUDIT-C
- AUDIT

Development of Canadian MAPS
(The Pour by the Fifth Estate)

Source: The Guardian

COVID 19 Risks for People with AUD and Homelessness

Risk Environment

- Inadequate living conditions
- Loss of Income related to panning and recycling
- Liquor Stores Limited Hours
- Liquor Stores May not take Cash
- Limited Intake and Availability of Detox & Tx services
- Sourcing Alcohol Daily (Cycle of Survival Drinking)
- Drinking often not allowed

Consequences

- Increased harms of COVID due to pre-existing health issues and alcohol use
- Increased risk of Withdrawal
- Non Beverage Alcohol Use
- Substitution of Illicit Drugs
- Increased Social Isolation

COVID 19 Responses

Increased awareness of the gap in alcohol harm reduction.

Development of Safer Drinking Education (www.cmaps.ca)

MAPs can Increase ability to Physically Distance, Stay in Place & Isolate

Risk Mitigation Guidelines including MAP (www.bccsu.ca)
FAQ's re Scale Up of MAPs (www.cmaps.ca)
COVID MAP Operational Guidance

23 MAPS in 13 Canadian Cities +10 New COVID MAPs

CMAPS Research Purpose

The purpose of our research is to rigorously evaluate MAPs in Canada and generate insights into the *implementation and outcomes*

Do MAPs reduce consumption, alcohol related harms, improve housing tenure, health and quality of life and reduce economic costs? How?

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Evaluating Implementation & Outcomes

Outcomes

Quantitative Surveys (n=364)

Secondary Administrative Data

Process and Impacts

Qualitative Interviews & Talking Circles (n=80+)

Policy and Protocol Analysis

Outcomes From The Canadian Managed Alcohol Program Study (CMAPS) 2013-2019

What have we learned about MAP outcomes from initial studies?

- ✓ **More likely to retain housing and experience increased safety and home** (Pauly et al. 2016: Pauly, et al., 2020)
- ✓ **43% reduction in police calls 47% reduction in hospital admissions (**Vallance et al., 2016)
- ✓ **Reduced hospital admissions and time in police custody = economic savings (cost-benefits)** (Hammond et al., 2016)
- ✓ **Safer sources and patterns of consumption: less NBA, lower daily quantities, less bingeing safer setting than the street** (Vallance et al., 2016; Stockwell et al., 2017)
- ✓ **Significantly fewer self-reported physical harms and social harms** (Vallance et al. 2016; Stockwell et al., 2017; Pauly et al., 2016)
- ✓ **Improved quality of life, re-connection to family & community** (Pauly et al. 2016, Pauly et al., 2020)

Two New Longitudinal Analyses

We present two new longitudinal analyses of outcomes from CMAPs:

1. **Trajectories** of alcohol use and related harms over 12 months for 59 "New" MAP clients and 116 controls from 6 sites across 5 cities.

2. **Mortality and healthcare utilization** (ER and hospital admissions) for 205 MAP clients from 5 Ontario MAPs and 131 controls between January 2008 and December 2018.

MAP vs Control Characteristics

Both MAP and Control participants were

- about 80% male,
- average age 46 years,
- severely alcohol dependent
- equally distributed across the five cities

Table 2. Comparisons of non-beverage consumption (NBA), alcohol dependence and harms between MAP and control participants assessed between 0 and 2 months after program entry †

Measures	Mean (95% CI)		T-test statistic, P-value
	MAP (n=59)	Control (n=116)	value
Quantity and frequency of NBA drinking			
NBA drinks per week/12 months	45.70 (18.43 - 113.32)	30.21 (7.31 - 124.81)	+1.36, 0.2315
Mean NBA drinking days/12 months	75.42 (27.05 - 210.33)	49.77 (14.12 - 175.43)	+2.06, 0.0941
Alcohol dependence and harms			
SADQ Score (6 months)	30.29 (25.14 - 36.51)	31.37 (26.87 - 36.62)	-0.45, 0.6696
AUDIT Score (12 months)	29.47 (27.51 - 31.58)	31.37 (30.04 - 32.76)	-2.18, 0.0808
Harm Score (12 months)	5.73 (4.92 - 6.67)	6.52 (5.90 - 7.20)	-1.81, 0.1303

Note: † Estimates adjusted for potential effects of age, sex and site of residence.

Outcomes at 6 and 12 months

Both MAP and Control participants reported:

➢ Fewer drinks per day

➢ Fewer drinking days per month

➢ Both reduced NBA consumption

MAP participants:

➢ **fewer harms** at Baseline and 6 months.

➢ Drinking was spread out over more days.

➢ **improved liver function** at 6 mo

➢ Leaving a MAP, liver status deteriorated

Effect of Policies on Outside Drinking?

Some MAPs have better outcomes than others, specifically those with management of outside drinking

➤ Fewer drinks per day (**11*** vs 18.0 vs 15 drinks)

➤ Fewer alcohol-related harms/month:
   2.4* vs 3.2 vs3.5

NB Adjustments made for age, sex, ethnicity and site-specific variation

What does this mean?

Many study **limitations** e.g. not randomized, self-report data, no true baseline measures, small samples from diverse sites but overall:

a) reduced their alcohol use over time,

b) consumed their alcohol in a more even, less sporadic pattern than controls, and

c) did not experience deterioration in liver function or of alcohol-related harms in general.

Mortality and Healthcare Analyses

Much **stronger analysis**, greater confidence in results:

➤ Longer time series: 11 complete years of data with dates of deaths, ER and hospital presentations

➤ More participants: 215 MAPs, 131 controls

➤ No participants lost to follow-up

We present **Multilevel Survival Analyses** comparing probabilities of MAP clients dying, attending ER or being admitted to hospital controlling when they are on a MAP versus off the MAP and versus neighbourhood controls with AUDs and unstable housing

Mortality Outcomes

Comparison Group	No of obs ≠	Follow-up days	No of deaths	Adjusted Model*		P-value
				Hazard Ratio	95% CIs	
On-MAP	580	195,623	41	0.54	*0.09-3.39*	0.5131
Off-MAP	481	138,190	41	1.20	*0.19-7.56*	0.8489
Control	128	548,777	29	1.00		
On- vs Off-MAP			41	**0.45**	***0.28-0.73***	**0.0010**

*Adjusted for age, gender, within-subject variation

ER Presentation Outcomes

Comparison Group	No of obs	Follow-up days	No of ER visits	Adjusted Model* Hazard Ratios and 95% CIs	P-value
On-MAP	4,058	195,627	3,478	1.0	
On- vs Pre-MAP	4,506	149,662	4,301	**0.73** *(0.62-0.86)*	**0.0002**
On vs Post-MAP	4,475	138,219	3,994	**0.74** *(0.63-0.87)*	**0.0004**
MAP vs Control**	5,239	642,220	4,983	1.05 *(0.71-1.55)*	0.8174

*Adjusted for age, gender, within-subject variation; **More alcohol-related, less other.**

Preliminary Conclusions

➢ Attendance at a MAP was associated with a 55% reduction in mortality risk and 26-27% fewer ER presentations than not being on a MAP

➢ There was a non significant increase in alcohol-related ER visits for MAP attendees vs controls – and a decrease in non-alcohol related ER visits

➢ **Indicates role of MAP in harm reduction**

➢ NB more analysis needed re impacts of specific MAP policies and of eligibility criteria

Implementation Findings: Canadian Managed Alcohol Program Study (CMAPS)

What have been learnings about MAP implementation?

- ✓ **Attention to program eligibility, policies, and tailored dosing** to reduce chronic harms. (Stockwell et al., 2013)
- ✓ **Not Just Alcohol: Six Key dimensions of MAP** (Pauly et al, 2018):
- ✓ **Less likely to re-budget for essentials, drink NBA, steal or commit crimes and more likely to go to treatment** (Erickson et al., 2018)
- ✓ **MAPs disrupt the constant cycle of displacement, survival, disconnection** (Pauly et al., 2019; Pauly, et al., 2020)

Focus on Implementation

Situational Analysis visually explores the elements in a "situation" and the relationships between them

(i.e. the implementation of MAPs within existing housing, health, and social systems)
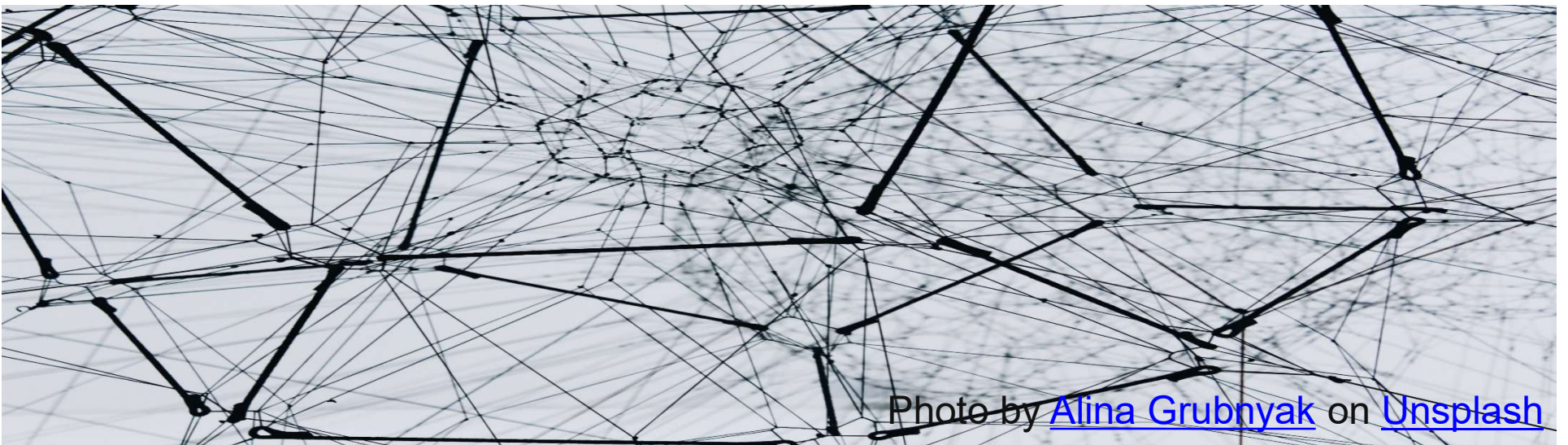
Photo by Alina Grubnyak on Unsplash
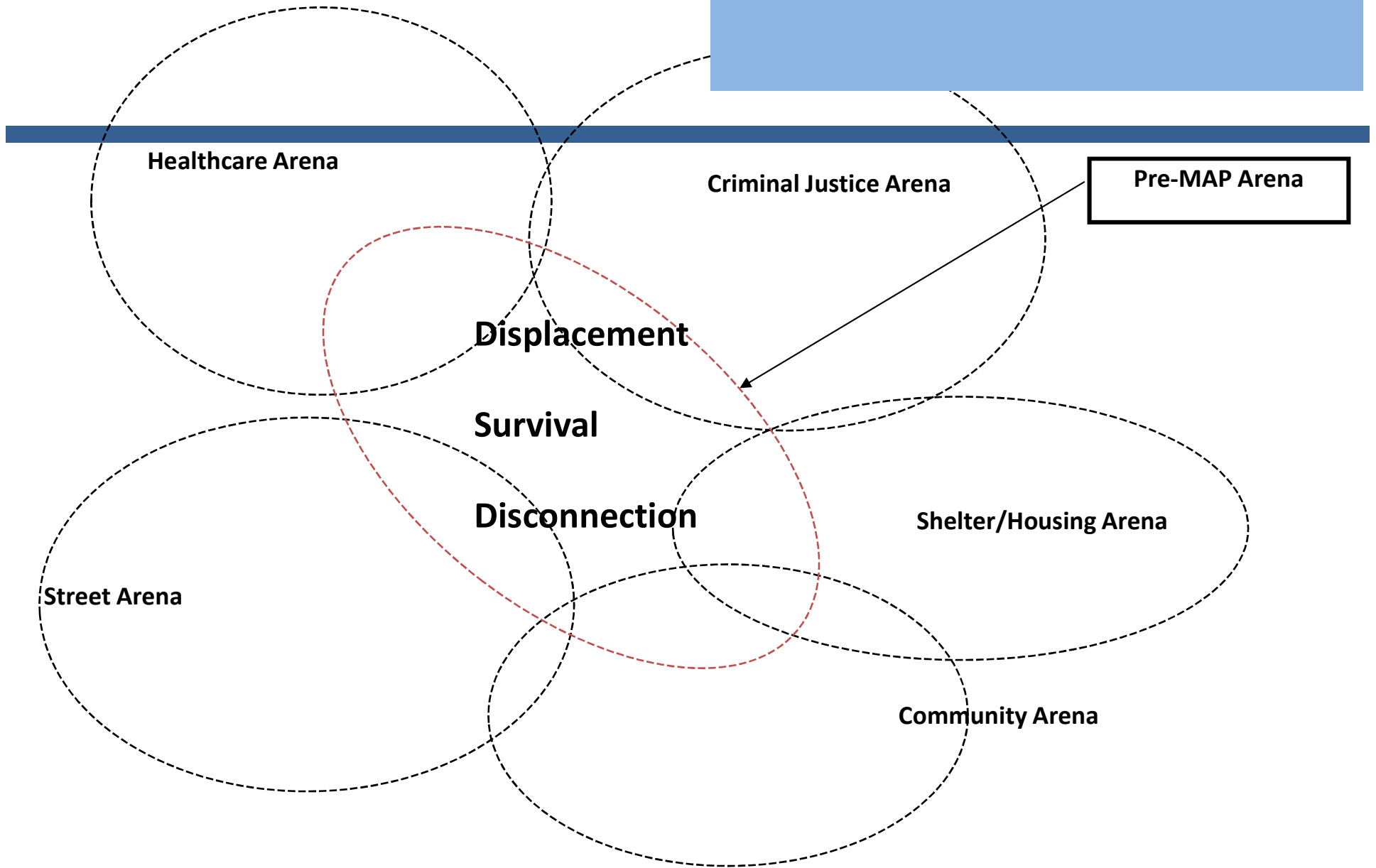
Figure 1. Pre-MAP Social Arenas
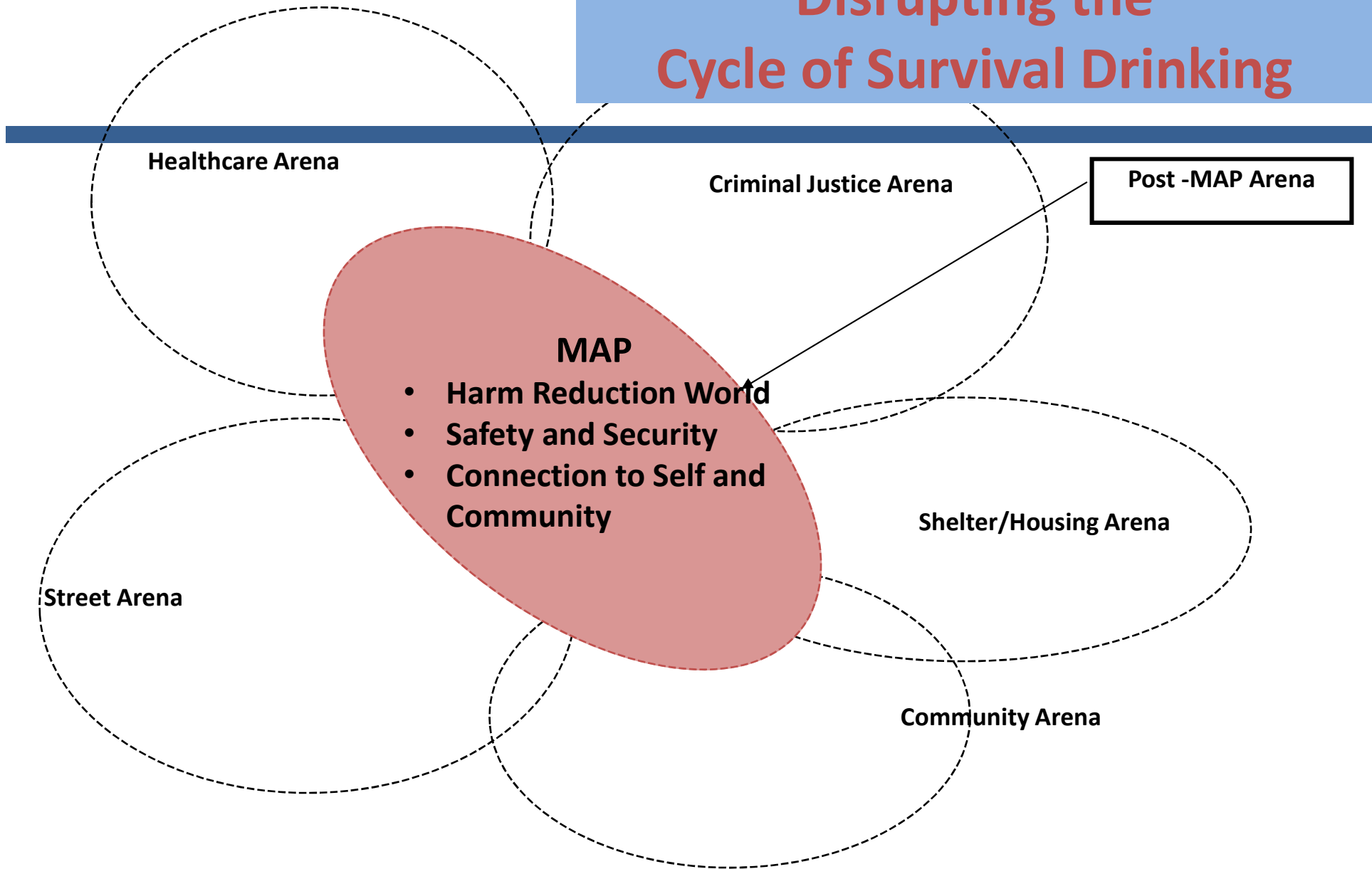
Figure 2. Post-MAP Social Arenas

Shifting from Pre-MAP World to Post-MAP is A Fragile Process

Cross-Case Analysis

M A P	Domains					Outcomes			
	Acuity	Support Level	Housing Security	Alcohol administration restrictions	Program Culture /Philosophy	Δ Consumption	ΔHarms	Social & Community Connectedness	Safety
1	High	High	Low-mod	Low-Mod.	HR & Community Integration	Mod. Reduction	Moderate Reduction	Mod.-high	Mod.
2	High	Low- Mod.	Low	High	HR, Safety & Palliation	Mod. Reduction	Low-Mod Reduction	Low-mod	Low
3	Mod.	High	Mod.	High	HR, PSR & Transition to Independence	High Reduction	High Reduction	Mod-high	High
4	Mod-High	Mod-High	High	Mod-High	HR, Community Integration & Culture-based Healing	High Reduction	Mod-High Reduction	High	High
5	High	Mod.-High	Very low	Moderate	HR & PSR	Mod. Increase	Low Reduction	Moderate	Low

Core Elements of Effective MAPS

Matching Needs and Supports

Alcohol Admin, Dosing and Policies

Housing

Community Connectedness and Belonging

COVID MAP Operational Guidance

Available at www.bccsu.ca and www.cmaps.ca

Current & Future Research

- Feasibility of Cannabis Substitution in MAP

- Development of Indigenous Culturally Supported MAPs (U of C, Alpha House, ACEH, CISUR) CIHR Funded (2020-2023)

- Evaluation of the COVID Risk Mitigation Guidelines including MAP (UBC, BC Centre for Excellence, CISUR) CIHR Funded (2020-2021).

- Scottish CSO Funded on MAP effectiveness during COVID (University of Stirling)

Future BCCSU Guideline Work - Alcohol
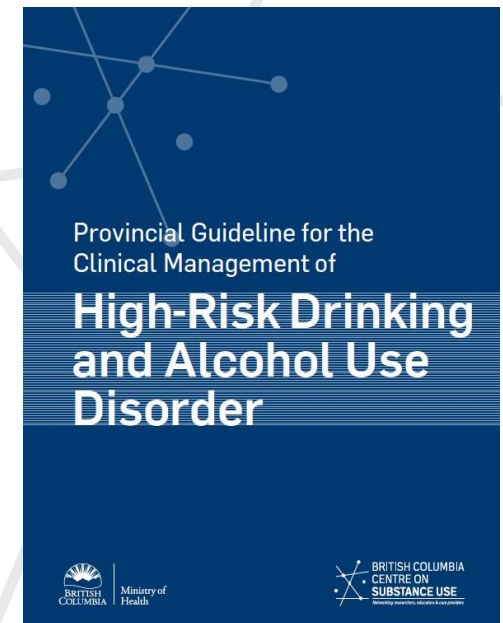
December 17, 2019

- Formal release

Supplements in development

- Pregnancy (finalized, awaiting release)
- Wise Practices for High-Risk Drinking and
- Alcohol Use Disorder in Indigenous Populations (in progress)

National work, funded through Health Canada SUAP grant (funded fall 2020)

- National high-risk drinking and AUD guideline & pregnancy supplement
- BCCSU-CISUR partnership to develop national operational guidance for managed alcohol programs

Provincial Guideline for the Clinical Management of **High-Risk Drinking and Alcohol Use Disorder**

British Columbia | Ministry of Health

BRITISH COLUMBIA CENTRE ON **SUBSTANCE USE**