Substance Use Prevention Strategy

Overdose Prevention and Education Network of Niagara

January 2020

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ACKNOWLEDGMENTS

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TABLE OF CONTENTS

LETTER FROM THE CO-CHAIRS

On behalf of the Overdose Prevention and Education Network of Niagara (OPENN), we are pleased to share the OPENN Substance Use Prevention Strategy. This Strategy reflects the input of a wide range of insights and expertise to address the issue of preventing and reducing substance use and related harms in Niagara.

We would like to extend our gratitude and appreciation to the people who shared their time and expertise to help form this Substance Use Prevention Strategy. As a result of these incredible contributions by community members, people with lived experience and service providers this Strategy has a local context. We look forward to continued engagement with these stakeholders and making an impact on substance use in our community.

We see this Strategy as a template for our coordinated efforts to address the significant substance use crisis in Niagara. It provides tangible recommendations and identifies key areas of our current system that need to be strengthened to reduce the misuse of substances and its impacts. The members of the Network collectively and independently will take steps to implement many of the recommendations outlined in this report. The Strategy provides a sound jumping off point for a more effective and coordinated response to substance use in our community.

Amy Fishleigh
Health Promoter
Niagara Region Public Health
OPENN Network Co-Chair

Glen Walker
Executive Director
Positive Living Niagara
OPENN Network Co-Chair

EXECUTIVE SUMMARY

The Overdose Prevention and Education Network of Niagara (OPENN) formed in 2016 to respond to overdoses in Niagara, including the opioid overdose crisis. In 2018, it commissioned its Prevention and Planning working group to create a Substance Use Prevention Strategy.

The Strategy recommendations are driven by five key sources of information: a scan of other municipal, regional, provincial and national substance strategies in Canada, a consultation with OPENN members, consultations with people with lived experience of substance use in Niagara and their family members, a review of published literature and a community survey.

There were consistent areas of focus in the prevention pillar of municipal and regional substance strategies in Canada: social determinants of health, mental health and skill-building education for children, youth and families.

Findings

The four key themes of the working group's consultations with people with lived experience and their family members were: invest in activities that address root causes of problematic substance use – trauma and other mental health concerns, lack of housing and employment, social isolation and early initiation of substance use; work towards meeting the demand for new and existing client-centred services in Niagara; reduce stigma and level up the understanding of reasons, risks and evidence-based interventions for substance use across Niagara; and support the development of a sense of purpose and skills for life in people in Niagara.

The four key themes of the working group's consultation with OPENN members were: partner effectively; prioritize people with lived experience and community engagement; develop an education strategy; and evidence-informed, upstream approaches.

Our review of published literature found positive effects of the following primary and secondary prevention activities on reducing substance use: social, decision-making and drug refusal skills training; school-based resilience training; motivational interviewing, cognitive-behavioural therapy or personalized feedback-based interventions; skills-based parenting interventions; screening and brief interventions in school or work settings; and public health messaging.

The community survey identified better access to mental health and addiction services, providing more supports to adults and children experiencing trauma and more employment, apprenticeship and career-building programs as prevention activities with their highest support.

Recommendations and next steps

The Strategy recommendations and corresponding key actions are activities that resonated across the working group's key sources of information. OPENN will prioritize key actions for implementation in 2020.

INTRODUCTION

Positive Living Niagara (co-chair)

Niagara Region Public Health (co-chair)

Niagara Regional Police Service

Niagara Health

District School Board of Niagara

Niagara Catholic District School Board

John Howard Society

Hospice Niagara

Family and Children's Services Niagara

Niagara Emergency Medical Services

Quest Community Health Centre

Niagara Falls Community Health Centre

Bridges Community Health Centre

Niagara Area Moms Ending Stigma

Niagara College

Brock University

Start Me Up Niagara

Community Addiction Services of Niagara

Canadian Mental Health Association (Niagara Chapter)

Salvation Army

City of St. Catharines

Niagara Falls Fire

St. Catharines Fire

Niagara Peninsula Dental Association

Welland McMaster Family Health Team

Local physicians and community members, including those with lived experience

OPENN formed in 2016. It aimed to address gaps in overdose prevention and response in Niagara, including gaps related to opioids. Establishing clear lines of communication, putting critical harm reduction activities in place as soon as possible and understanding the opioid crisis with better data were among top priorities. OPENN created four action-oriented working groups: Harm Reduction (including a supervised consumption services subgroup), Prevention and Planning, Communication and Education, and Data and Surveillance. The working groups have completed significant projects, for example, establishing an Overdose Prevention Site (now a Consumption and Treatment Services site) in St. Catharines, significantly improving local opioid surveillance data quality and setting up an online Adverse Reaction Reporting System.

THE NEED FOR A SUBSTANCE USE PREVENTION STRATEGY IN NIAGARA

Substance use in Niagara

The data presented in this section show that substance use is common in Niagara and measures of local substance-related harm are worsening for several substances. Substance-related use of the health system by people in Niagara is most frequently due to alcohol.[1,2] Opioids, cocaine, other CNS (central nervous system) stimulants (e.g., methamphetamines) and cannabis are the substances next

most frequently related to use of the health system by people in Niagara, with the order of frequency depending on the measure. [1,2] Harm related to the use of multiple substances together is common.[1] A strategy is needed to address the scale and trends of substance-related harms in Niagara.

Due to the urgency of the opioid crisis, significant national, provincial and local resources were directed to improving opioid-related data. As a result, the timeliness, quality and variety of opioid-related data for Niagara are greater than they are for other substances. Available local data are presented for alcohol, opioids, cocaine, other CNS stimulants and cannabis use and related harms in Niagara.

Opioid use and related harms in Niagara

In Niagara, as it has elsewhere in Canada, an abundance of prescription opioids in the community, changes to their availability and a shift to a more potent non-pharmaceutical opioid supply have interacted with the social determinants of health to produce a public health crisis.[3,4] Between 2005 and 2017, rates of Emergency Department (ED) visits, hospitalizations and deaths due to opioids appear to have quadrupled, doubled and tripled in Niagara, respectively (Figure 1).[5] These trends mirror those seen at the provincial level in Ontario.

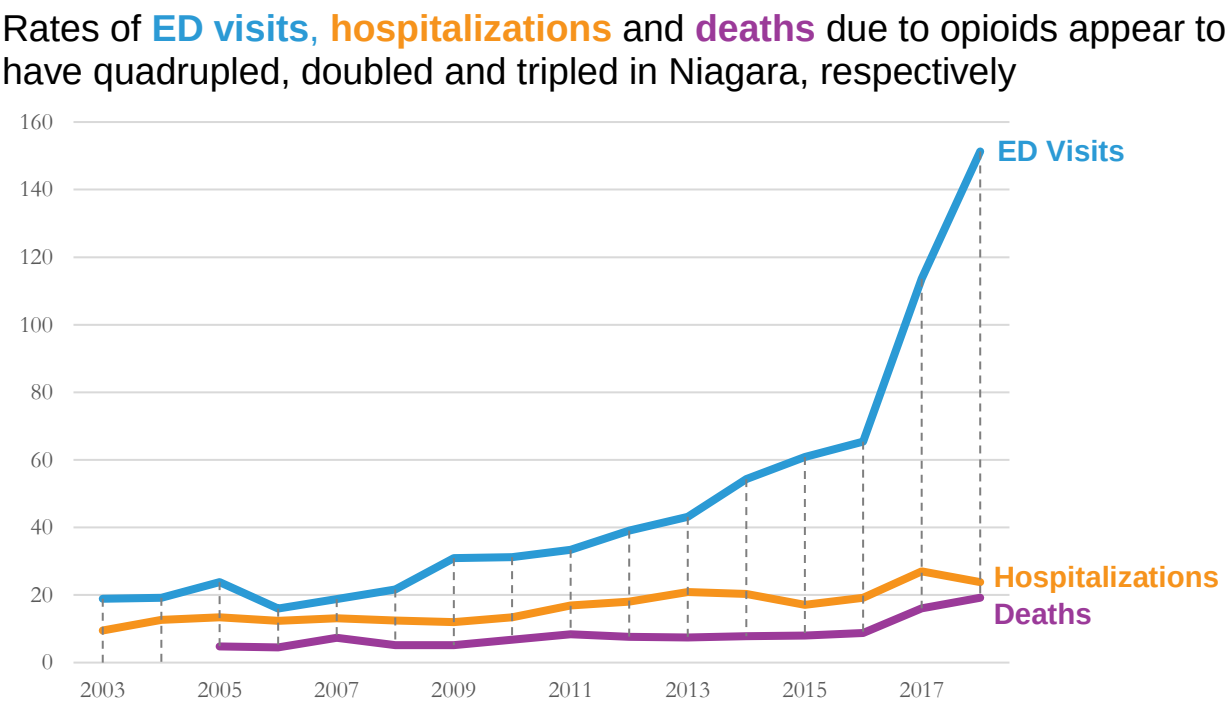


Figure 1
Opioid-related morbidity and mortality in Niagara, Rate per 100,000, 2003-2018
Data source: Public Health Ontario[5]

The highest rates of opioid-related ED visits, hospitalizations and deaths in Niagara are seen in males 25 to 44 years of age (Figure 2).[5] Women 25 to 44 years of age account for the highest rate of ED visits and deaths in females, while women 45 to 65 years of age have the highest rate of hospitalizations due to opioids in females.

Males in Niagara aged 25-44 account for the highest rates of ED visits, hospitalizations and deaths related to opioids

	ED Visits	Hospitalizations	Deaths
Highest	25-44 year-old males 376.0 per 100,000	25-44 year-old males 48.1 per 100,000	25-44 year-old males 48.8 per 100,000
2nd highest	15-24 year-old males 175.6 per 100,000	45-65 year-old females 31.8 per 100,000	45-65 year-old males 25.1 per 100,000
3rd highest	25-44 year-old females 143.0 per 100,000	45-65 year-old males 28.1 per 100,000	15-24 year-old males 19.9 per 100,000

Figure 2
Opioid-related morbidity and mortality in Niagara by age and sex, Rate per 100,000, 2016-2018
Data source: Public Health Ontario[5]

Morphine Milligram Equivalent (MME) is a common way to summarize a total amount of opioids, regardless of type. Amounts of opioids other than morphine are converted to what their potency would be if they were morphine (e.g., 65 mg of oxycodone is counted as 100 mg morphine equivalents) and counted up. Since 2013, the amount of opioids prescribed for pain filled by Niagara residents measured in MME has decreased by about 35% (see Figure 3).[6] In 2015, 539,891,947 MME were dispensed, while in 2018, 353,588,340 MME were dispensed.

The **total amount of opioids prescribed for pain** in Niagara is decreasing

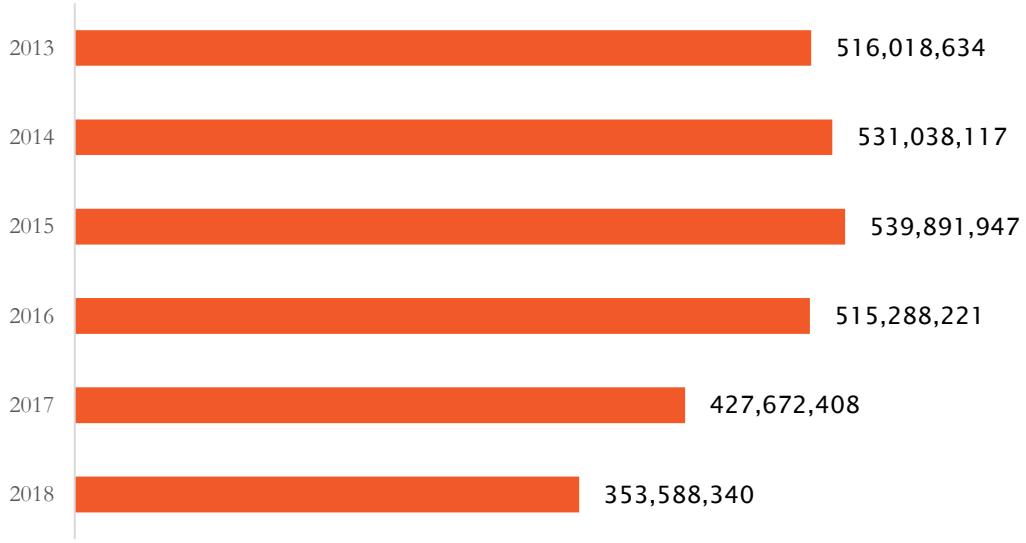


Figure 3
Total amount of opioids prescribed for pain in Niagara in Morphine Milligrams Equivalent (MME), 2013-2018
Data source: Ontario Drug Policy Research Network[6]

Over the same period, the number of people in Niagara dispensed methadone from pharmacies to treat opioid addiction has been fairly consistent, ranging from 2,668 in 2015 to 2,906 in 2017 (Figure 4).[6] The number of individuals dispensed buprenorphine/naloxone (Suboxone), however, has more than doubled, from 608 in 2015 to 1,334 in 2018.

The number of individuals on Opioid Substitution Therapy in Niagara has increased by 29% since 2013

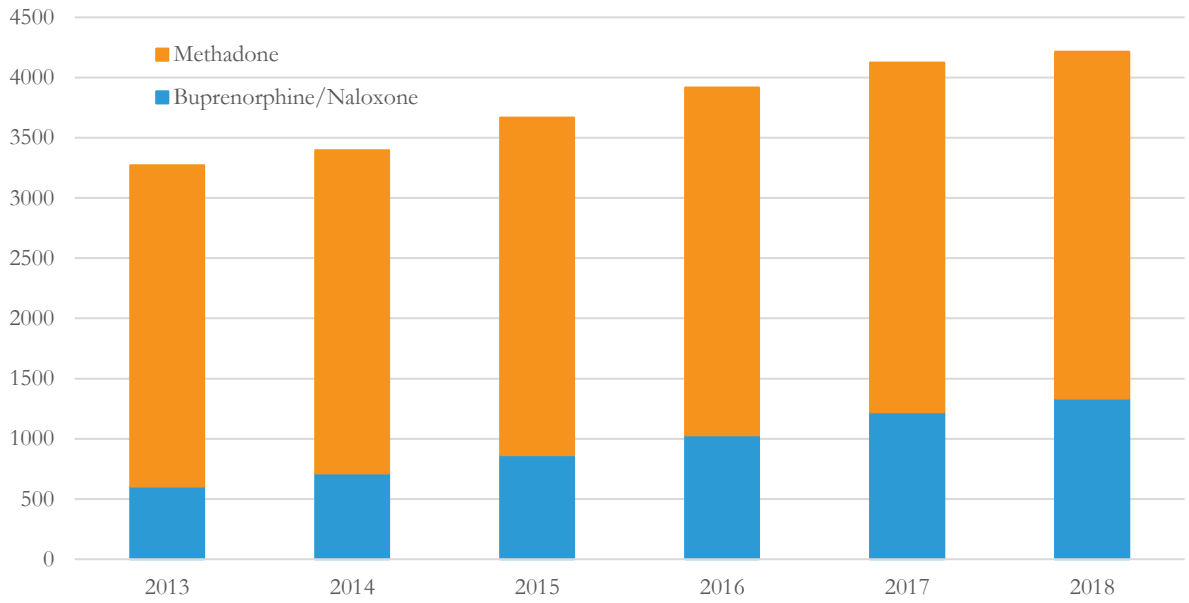


Figure 4
Number of individuals on Opioid Substitution Therapy in Niagara, 2013-2018
Data source: Ontario Drug Policy Research Network[6]

Consistent with other regions in Ontario, a significant increase in the number of overdose deaths in Niagara related to fentanyl has been observed as overdose deaths due to oxycodone decline (see Figure 5).[5] Hydromorphone and methadone are also frequently present at death from an opioid overdose in Niagara.

Fentanyl is the most common opioid present at death due to overdose in Niagara

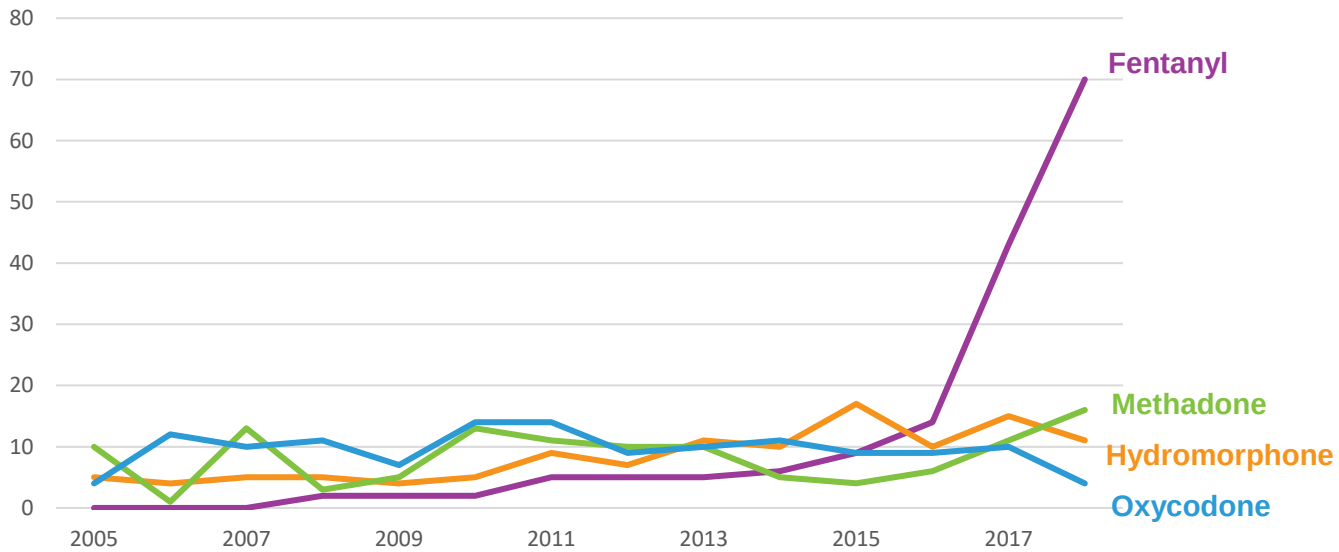


Figure 5
Type of opioid present at death in Niagara by total number of deaths, 2005-2018
Data source: Public Health Ontario[5]

Alcohol use in Niagara

It is common for people in Niagara to use alcohol in patterns exceeding low-risk use guidelines (Figure 6).[7] Almost half of people over 18 years of age in Niagara report drinking in a way that exceeds low-risk drinking guidelines for injury or chronic disease.[8] One in five adults in Niagara drink heavily at least once per month, consuming 5 or more drinks per occasion for males or 4 or more drinks per occasion for females. Age-adjusted percentages of people in Niagara exceeding low-risk alcohol use guidelines for injury, chronic disease and heavy drinking do not exceed provincial averages for these indicators.

42.7 % **of adults in Niagara are at risk of injury from alcohol use**

24.7 % **of adults in Niagara are at risk of developing chronic disease from alcohol use**

20.6 % **of adults in Niagara drink heavily**

Figure 6
Percent of people aged 19 or older in Niagara exceeding Low Risk Drinking Guidelines, 2015-2016
Data source: Public Health Ontario[8]

Cannabis, cocaine, methamphetamine and other drug use in Niagara

Around half of people between 12 and 64 years of age in Niagara have used cannabis in their lifetime, 14.7% have used it in the past 12 months and 2.9% use it daily (Figure 7).[9] Around 1 in 6 people in Niagara have ever used hallucinogens, around 1 in 7 have ever used cocaine, around 1 in 14 people have ever used MDMA, and around 1 in 16 have ever used amphetamines or methamphetamines.

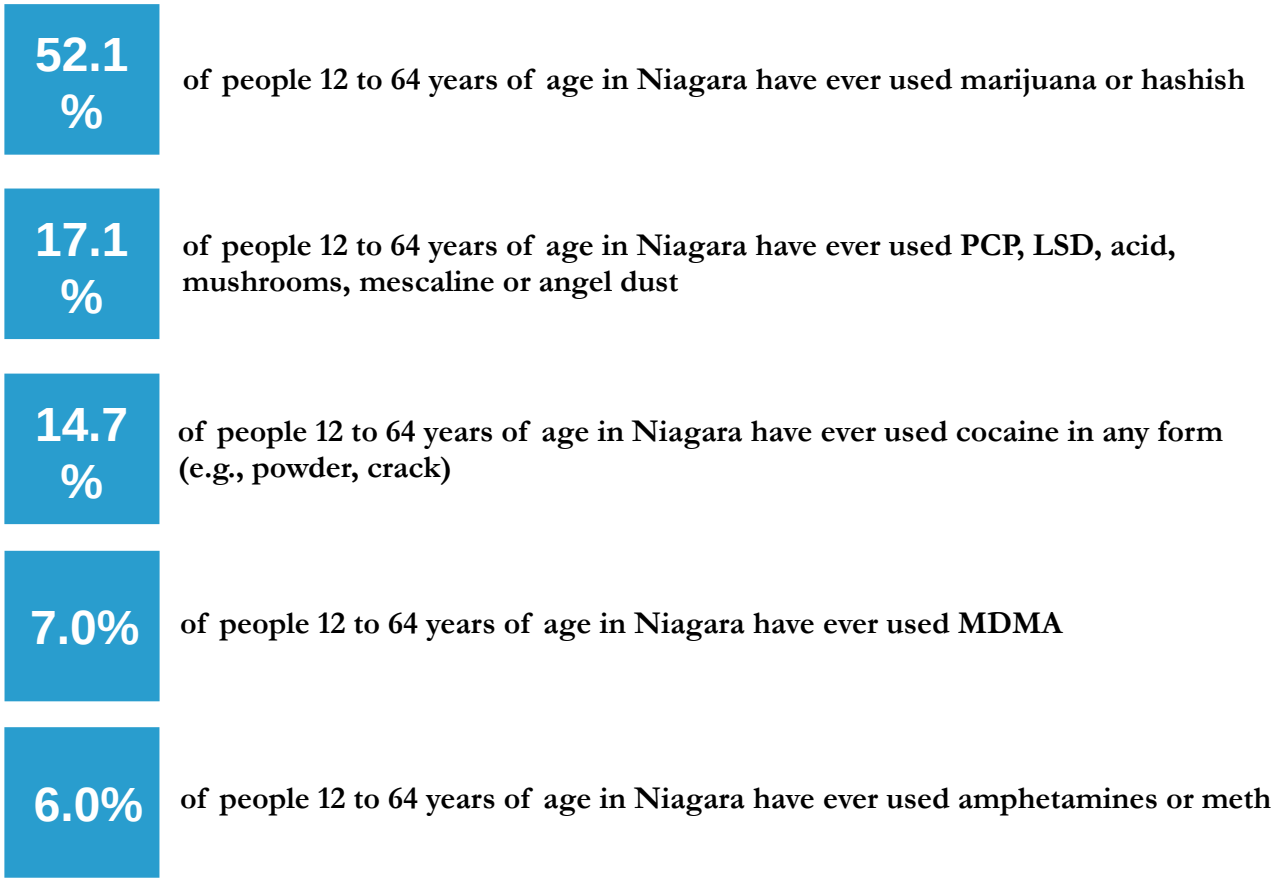


Figure 7
Percent of people aged 12-64 in Niagara who have ever used substances, 2015-2016
Data source: Statistics Canada, Canadian Community Health Survey[9]

Hospitalizations and ED visits related to non-opioid substances in Niagara

If media reporting was taken to represent what substances are most responsible for harm in Canada, one could be forgiven for thinking that opioids were number one. Across Canada, tobacco and alcohol are the substances responsible for the most deaths, followed by opioids and cannabis.[10] In Niagara, alcohol contributes to the greatest number of hospitalizations related to substance use (see Figure 8).[1] Age-adjusted rates of hospitalizations for cannabis-related harms were significantly lower in Niagara than in Ontario overall in 2014, 2015 and 2016, but were not significantly different from the provincial rate in 2017.[11]

Between 2016 and 2018 in Niagara, more hospitalizations were related to **alcohol** than to opioids, cocaine, cannabis and other key substances combined

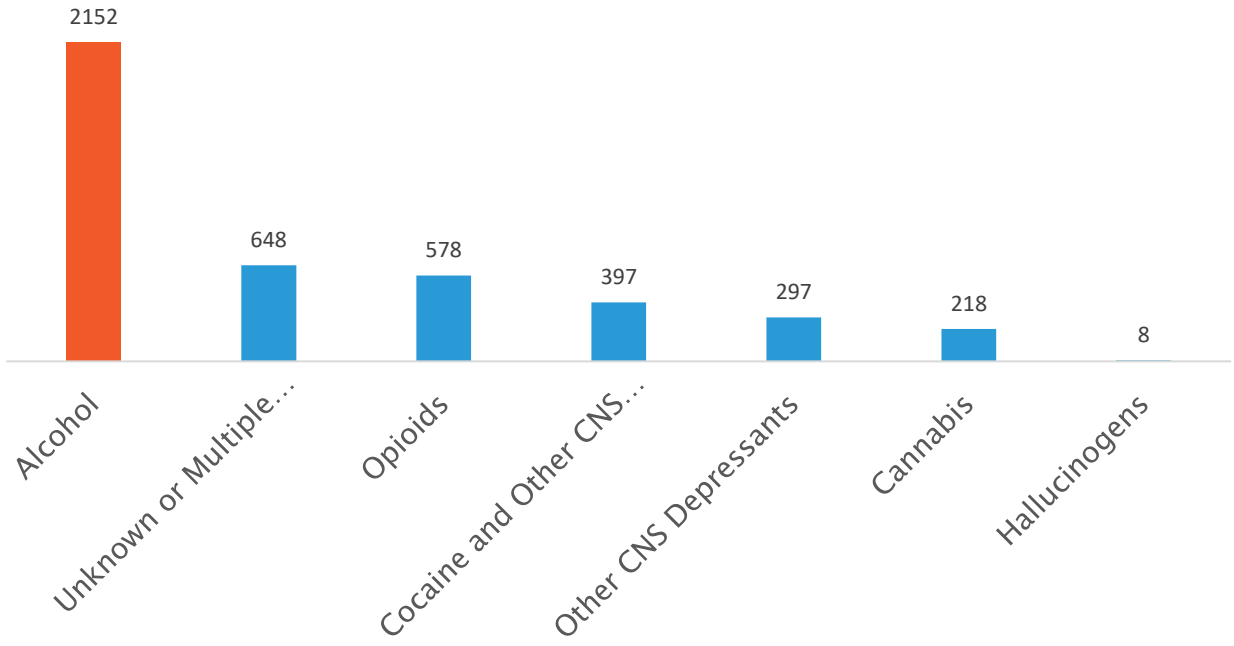


Figure 8
Total number of hospitalizations related to substances in Niagara, 2016-2018
Data source: Ontario Ministry of Health and Long-Term Care: IntelliHealth Ontario[1], Date Data Extracted 12/12/2019
Other CNS Depressants include benzodiazepines, barbiturates; Other CNS Stimulants include amphetamines, methamphetamines, ecstasy

Alcohol also contributes to the greatest number of ED visits related to substance use in Niagara (Figure 9).[2] Cannabis-related ED visits have doubled over the past five years. ED visits related to other CNS stimulants, like methamphetamines and amphetamines, appear to have tripled in the same period. Niagara's age-adjusted rates of ED visits for cannabis-related harms were significantly higher than overall provincial rates in 2014, 2015, 2016 and 2017.[11]

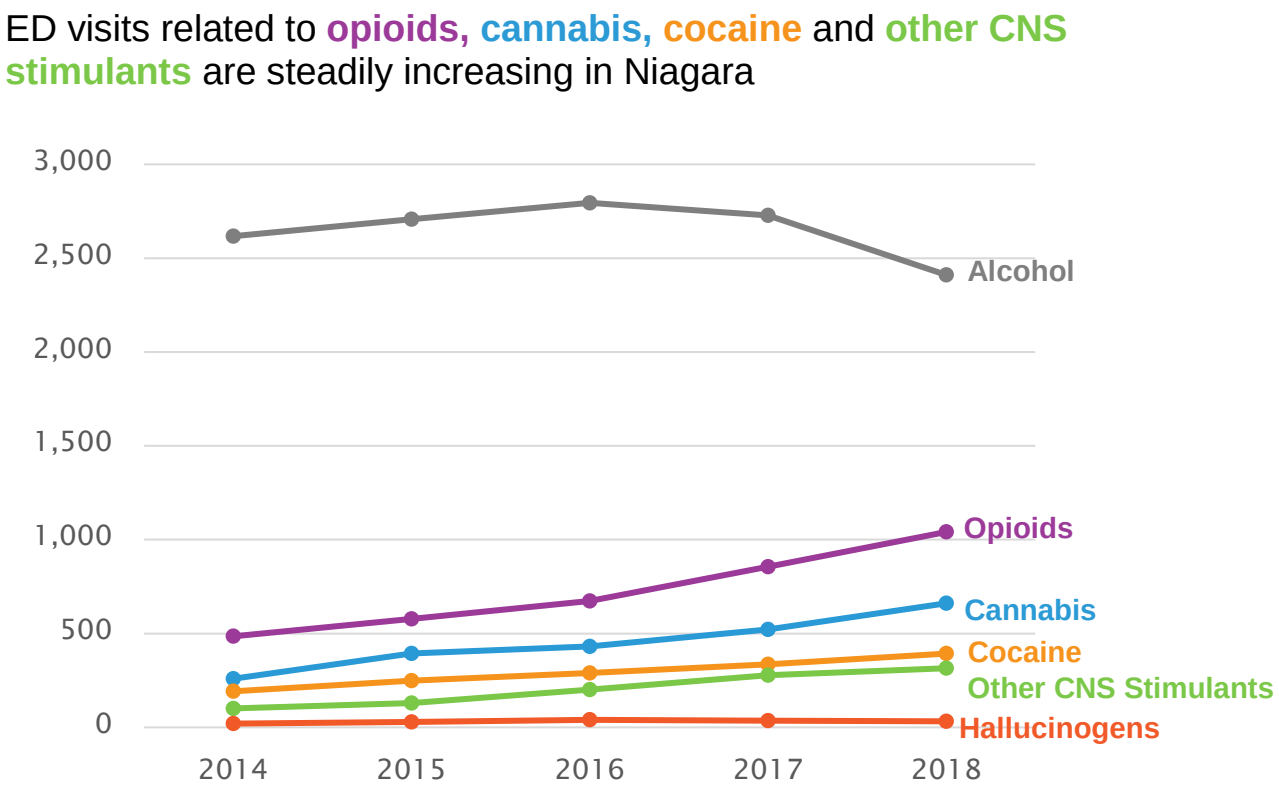


Figure 9
Total number of ED visits related to substances in Niagara, 2014-2018
Data source: Ontario Ministry of Health and Long-Term Care: IntelliHealth Ontario[2], Date Data Extracted 12/12/2019
Other CNS Stimulants include amphetamines, methamphetamines, ecstasy

"We are in a drug crisis – not just opioids."

-Person with lived experience of substance use in Niagara

DEVELOPING A SUBSTANCE USE PREVENTION STRATEGY FOR NIAGARA

Why start the Strategy with prevention?

This report comes in 2020, when much has already been done to address opioids and other substances in Niagara across all four pillars of harm reduction, treatment, prevention and enforcement. OPENN's wide range of activities to date reflect current evidence for what works to reduce opioid overdoses and other substance-related harms. Niagara's comprehensive community response is consistent with what is seen elsewhere in communities most active against opioid-related harms in Canada and the United States. For many of its current activities, OPENN's current primary objective is securing the resources necessary to scale them up and reach more people.

OPENN has not yet reached its goal of a Niagara where substance-related harms are significantly decreasing year after year. A Strategy is needed. On the foundation of Niagara's four pillar response, OPENN is in position to develop a carefully planned Strategy for moving Niagara towards its goal. Starting the Strategy with prevention recognizes the potential for upstream initiatives to reduce the future need for harm reduction, treatment and enforcement activities. It also recognizes the high return-on-investment of population-level prevention and that substance use prevention is relatively underresourced in Ontario compared with other pillars. When this report speaks of prevention, it refers to primary and secondary prevention.

Primary prevention decreases problematic substance use before it starts

Secondary prevention identifies and manages early problematic substance use

OPENN will undergo strategic planning for harm reduction, treatment and enforcement activities at subsequent stages so that its Substance Use Strategy for Niagara drives all areas of its current four-pillar work. The OPENN Substance Use Strategy will be a living strategy, one that evolves with the community's needs and the best available evidence.

The working group's process

In 2018, the OPENN Steering Committee commissioned the OPENN Prevention and Planning working group to develop a Substance Use Prevention Strategy. The working group's process for developing the strategy is shown in Figure 10.

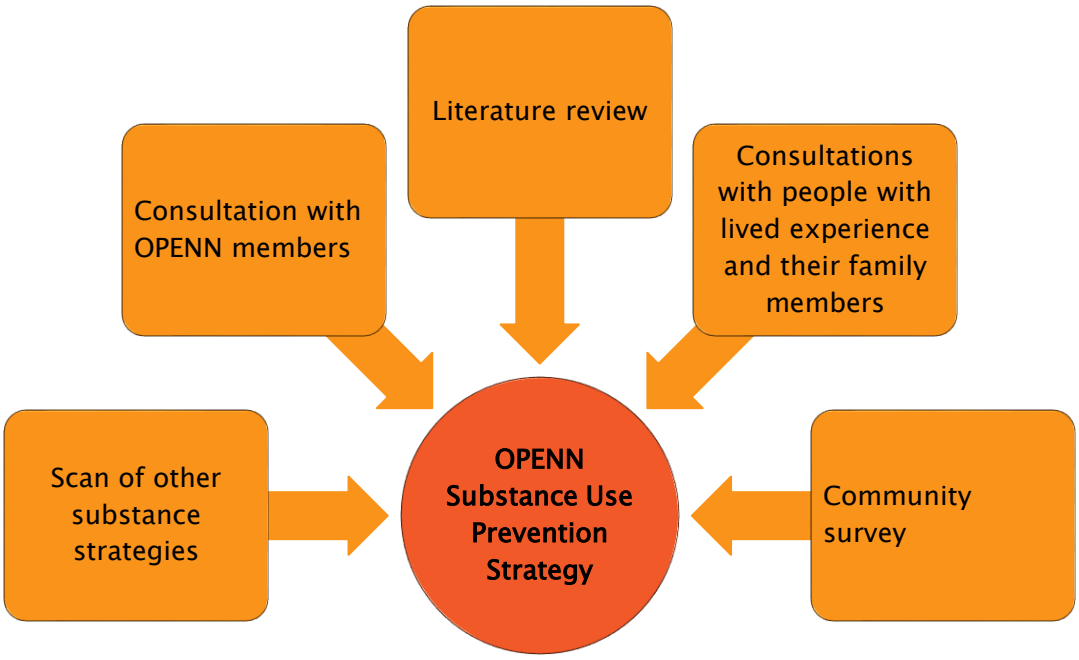


Figure 10
OPENN Substance Use Prevention Strategy Development

The working group first scanned national, provincial, regional and municipal substance strategies from across Canada. There were consistent areas of focus in the prevention pillar of these strategies: social determinants of health, mental health and skill-building education for children, youth and families. To develop this Strategy, the working group also reviewed published literature, consulted people with lived experience of substance use in Niagara, talked to people in OPENN working with populations with lived experience of substance use in Niagara or at risk of problematic substance use in Niagara, and surveyed the community. The working group took all this information to determine which activities are evidence-supported and will have the best chance of successful implementation locally.

A PREVENTION MODEL FOR GUIDING ACTION

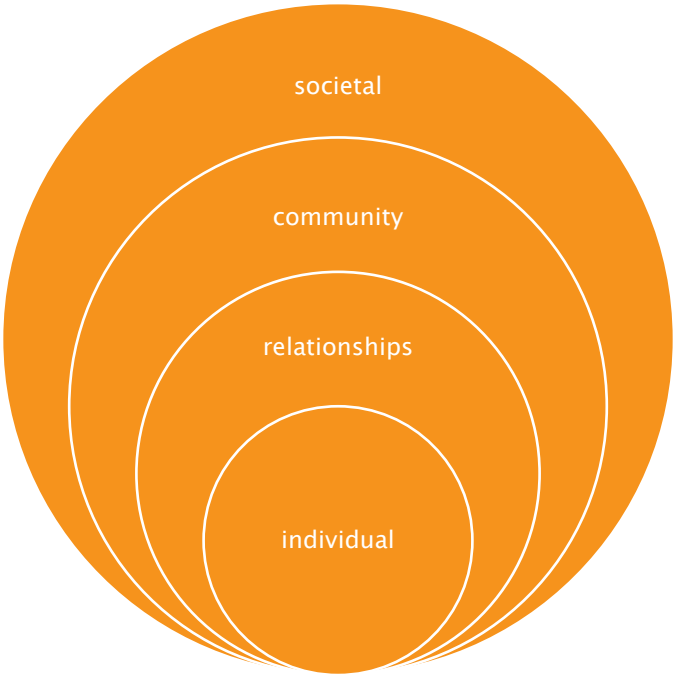


Figure 11
The social-ecological model of prevention
Source: Adapted from the Centers for Disease Control and Prevention[12]

OPENN recognizes that no single factor leads to problematic substance use and no single intervention will prevent it. The social-ecological model is a commonly used framework for approaching the prevention of issues of public health importance.[12] The societal level is about cultural norms and social policies. This includes what culture says is normal when it comes to substance use and policies set by governments that affect health and well-being. The community level is about the settings of influential relationships – schools, workplaces, and neighborhoods, for example. The relationship level is about influential relationships, those with family, friends, neighbours, colleagues and peers. The individual level is about personal factors that affect attitudes, beliefs and behaviours. The model serves as a useful touchstone for the Strategy, a reminder that Strategy actions should span all levels if OPENN wants to effectively prevent problematic substance use in Niagara.

METHODS AND RESULTS

LITERATURE REVIEW METHODS

A systematic search of published literature was conducted in CINAHL, Ovid Medline and PsycINFO in June 2018. Two reviewers screened titles and abstracts of all initial results, selected and reviewed articles for full-text review, and screened these studies through inclusion criteria.

Inclusion Criteria

Systematic reviews of reviews, randomized controlled trials or observational studies

Studied outcomes include intervention effect on use of alcohol, cannabis and/or illicit substances

Community-level or other defined setting (such as school, class, home)

Primary or secondary prevention interventions

Articles published in the last 10 years

Results in English

Many reviews assessed the effects of prevention interventions on the use of more than one substance. In this review, tobacco use results are not reported if results for alcohol, cannabis or other drugs were individually available. If only effects on substance use in general were reported, including tobacco, general effects were reported. Two reviewers independently assessed risk of bias in included studies using the Health Evidence Quality Assessment Tool for Review Articles (HEQATRA) and resolved any disagreements about the scoring of studies.[13]

LITERATURE REVIEW RESULTS

The published literature search initially produced 376 results (see Figure 12). 306 records were excluded after screening of titles and abstracts. Hand-searching healthevidence.org revealed eight additional results not captured in the systematic database search. In total, 78 articles were selected for full text review. 58 studies did not meet criteria for inclusion, leaving 20 reviews included for analysis.

The quality of each included review was scored using the Health Evidence Quality Assessment Tool for Review Articles (HEQATRA).[13] It is important to note that the tool scored the quality of the systematic review, not the quality of the original studies in each review. This latter task was done by the authors of each systematic review. Readers are encouraged to consult the quality assessments of individual studies reported in the included systematic reviews.

For simplicity, results shown in Tables 1 to 3 in the Appendix report whether interventions reduced use of a drug or not without providing details of specific outcomes. Depending on the outcome reviewed, reduced use may refer to decreased frequency or quantity of use of a substance over particular time periods.

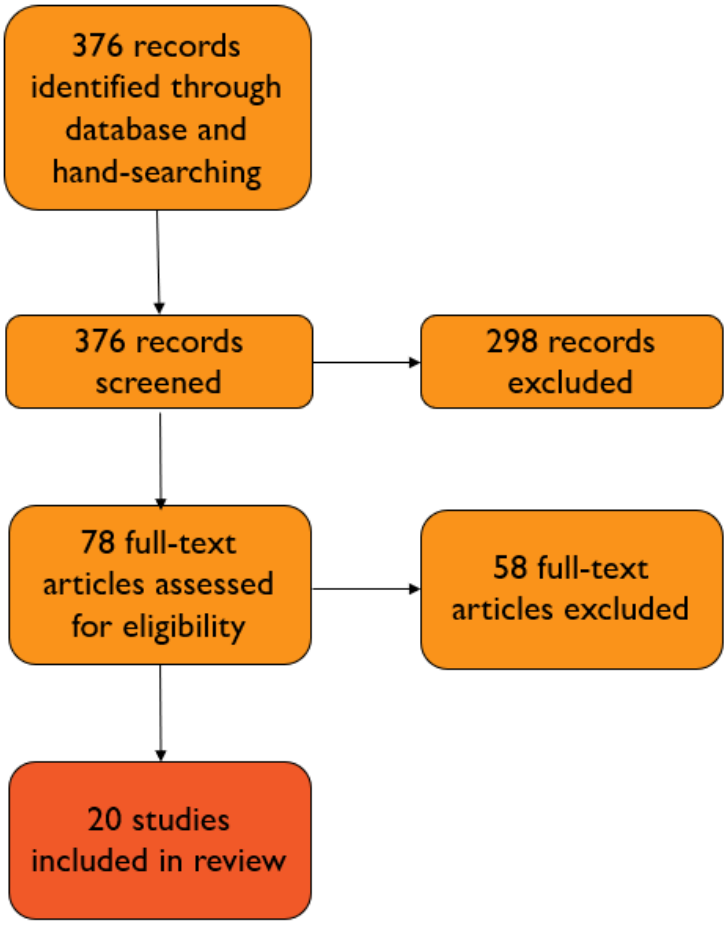


Figure 12
Study selection flow diagram

Prevention interventions in school settings

Five reviews summarized findings from studies of prevention interventions delivered in school settings only (see Table 1, Appendix).[14-18] Settings included elementary schools, high schools, colleges and universities. Interventions included education and skills training (peer-led and non peer-led), brief interventions based on motivational interviewing (MI) and cognitive-behavioural therapy (CBT) techniques, and sports participation.

All five reviews examined cannabis and illicit or other drug use.[12-16] Four reviews looked at alcohol as well.[14,15,16,18] A review of education and skills training found that peer-led interventions were associated with lower odds of cannabis and alcohol use.[14] A review by Onrust and colleagues found that the effect of program characteristics on alcohol and drug use was modified by the age of students.[15] A review of brief interventions primarily based on MI and the principles of CBT showed that brief interventions targeting use of specific substances were effective for those substances, but not untargeted ones.[16] A review of interactive sessions using a social competence approach, a social influence approach, or both by Faggiano and colleagues found that using both seemed to have better results.[17] Kwan and colleagues showed that sports participation is associated with significantly decreased cannabis and illicit drug use and increased alcohol use.[18]

Internet-based, text-message, or telephone prevention interventions

Six reviews summarized findings from studies of prevention interventions delivered via internet, text-message or telephone (see Table 2, Appendix).[19-24] Four studies reviewed online interventions[19-22], one study reviewed text-messaging interventions[23], and one reviewed online, text-messaging and telephone interventions.[24] All reviews but one included studies where the intervention was based on MI, CBT, or brief intervention techniques.[20-24] One review looked at personalized feedback programs only.[19]

Four reviews examined cannabis use[19-22], one review looked at alcohol[23] and another at alcohol and cannabis use.[24] The three reviews which used pooled estimates of effect sizes found small, significant effects of interventions on cannabis use.[20-22] The remainder of reviews reported results narratively.[19,23,24] Two internet-based marijuana interventions reviewed by Gulliver and colleagues did not show effectiveness for reducing or preventing marijuana use.[19] Jiang and colleagues reported one study among cannabis users greater than 16 years of age showing effectiveness of telephone MI in reducing use.[24] For illicit drugs, three group MI trials and two internet-based MI trials did not show effectiveness. Regarding alcohol use prevention, Jiang and colleagues found that studies of telephone MI, internet-based MI and MI-based text-messaging were more consistently effective than group-based MI. Mason and colleagues reported a significant decrease in alcohol consumption in one of three text-messaging intervention studies.[23]

Prevention interventions in multiple settings

Nine reviews analyzed prevention interventions in multiple settings, including family homes, schools, workplaces, post-secondary institutions, primary care clinics, emergency departments, hospitals, community organizations and the community more broadly defined (e.g., mass media campaign areas, geographical areas affected by policies) (see Table 3, Appendix).[25-33] Interventions assessed in these settings include family programs focusing on behaviour and family relations, training for social and decision-making skills, school-based resilience training, media campaigns, MI and CBT-based programs, social norms and personalized feedback programs, positive youth development programs, and policy interventions.

Six reviews reporting pooled estimates of effect sizes had mixed results.[25-30] Reviews of family programs, universal school-based resilience interventions, prevention interventions based on MI or CBT, and normative or personalized feedback had small, statistically significant effects on substance use.[25-28] A meta-analysis of positive youth development interventions did not show a significant effect on reducing substance use.[29] Meta-analyses of mass media campaigns did not demonstrate effectiveness for reducing use of illicit drugs, but four of five unpooled studies of mass media campaigns showed a decrease in cannabis use in selected age groups.[30]

Three reviews did not include a meta-analysis.[31-33] Norberg and colleagues found that training for refusal, decision-making and social skills can be effective for reducing cannabis use among youth, but effect sizes were mostly trivial to small.[31] Stronger effects were observed when programs were universal, multimodal, targeted to 10-13-year olds, used non-teacher or multiple facilitators, and were shorter in length with booster sessions. In Stockings' 2016 review, population and prevention interventions with Level A or B evidence and an effect size of small meaningful benefit or greater for reducing alcohol use included minimum age, taxation, random roadside drug testing and skills-based parenting interventions.[32] For use of other drugs, skills-based parenting interventions were effective. Some policy interventions (e.g., minimum age) are not available for illicit drugs. In Stockings' 2018 review, community-level prevention interventions had mixed results and were more likely to reduce alcohol-related harms (e.g., traffic accidents) than alcohol use.[33] Five of six studies of increased police enforcement of drink-driving laws and three of four studies incorporating screening, brief intervention and referral to treatment into broader community initiatives reported positive effects on alcohol use and related harms. About half of studies of parental education, responsible service training, public health messaging, school-based skills training and alcohol-free events showed positive effects on alcohol use and/or related harms, but often had co-interventions such as increased police enforcement of drink-driving laws that may have influenced the results.

LIMITATIONS OF THIS LITERATURE REVIEW

Though the quality of systematic reviews was generally high, the quality of individual studies included in each systematic review was mixed. Important risks of bias were commonly found in the individual studies. This often reflects the nature of studying community-level or setting-level interventions, where a lack of randomization, co-interventions, avoiding contamination between groups and relying on self-reporting of substance use outcomes present challenges to confidence in results.

Some important substance use prevention interventions were not reviewed here. For instance, studies of the effects of housing, income or employment interventions on substance use were not captured in the working group's search, though they exist.[34] The particular combination of strict inclusion criteria used in this review may be responsible for their absence. Lack of inclusion in the working group's review should not be taken as a lack of evidence for such interventions.

METHODS OF CONSULTATIONS WITH PEOPLE WITH LIVED EXPERIENCE IN NIAGARA

People with lived experience of substance use in Niagara provided input in group sessions held at sites where they were already clients. Sessions were one to one-and-a-half hours in length. Two members of the Prevention and Planning working group and a staff person of the host organization co-facilitated the sessions.

Co-facilitators asked five pre-set questions to participants using a semi-structured approach to the sessions, allowing conversations to take natural, unplanned directions. Several individuals with lived experience of substance use reviewed and approved questions. A note-taker recorded responses for later analysis. The five pre-set questions were:

1. What are the challenges someone experiences when trying to access support, for example, how does stigma and discrimination play a role, if at all?

2. How can we ensure a safe and welcoming environment for people to seek help?

3. What about individuals who may not be ready yet? How can we increase individuals' desire to want to reach out?

4. Thinking about the reasons that people start using drugs, what types of things (or people or places) could prevent drug use from starting in the first place?

5. How do you know when someone's drug use is getting beyond their control? What types of things (or people or places) could help reduce the risk of someone's drug use from increasing?

The OPENN Prevention and Planning working group reviewed all responses and conducted a thematic analysis. Comments were coded based on key words and the overall sentiment of the comment.

RESULTS OF CONSULTATIONS WITH PEOPLE WITH LIVED EXPERIENCE IN NIAGARA

41 individuals with lived experience of substance use in Niagara at five different sites participated in the consultations.

Date	Location	Number of Participants
March 21st, 2019	Positive Living Niagara (St. Catharines site)	7
April 13th, 2019	Lived Experience Advisory Network	10
April 17th, 2019	Positive Living Niagara (Niagara Falls site)	7
May 29th, 2019	Moms Stop the Harm	7
August 21st, 2019	The Wesley, Special Care Unit (managed alcohol program)	10

Four key themes emerged from analysis of the participants' responses:

Theme One: Invest in activities that address root causes of problematic substance use – trauma and other mental health concerns, lack of housing and employment, social isolation and early initiation of substance use.

Theme Two: Work towards meeting the demand for new and existing client-centred services in Niagara.

Theme Three: Reduce stigma and level up the understanding of reasons, risks and evidence-based interventions for substance use across Niagara.

Theme Four: Support the development of a sense of purpose and skills for life in people in Niagara.

Several subthemes in each key theme were identified. Across the four key themes, the three most commonly mentioned subthemes were:

1. **Purpose in life and skills for life without drugs (42 mentions)**
2. **Education [especially for children and youth] (42 mentions)**
3. **Stigma reduction (36 mentions)**

Theme One: Invest in activities that address root causes of problematic substance use – trauma and other mental health concerns, lack of housing and employment, social isolation and early initiation of substance use

People with lived experience recommended upstream approaches for preventing problematic substance use. Stable housing was mentioned as an important protective factor against problematic substance use. Affordable housing, homelessness prevention and social housing were named as programs in need of increased resources. Participants suggested raising awareness of existing housing programs amongst people who are vulnerably housed. Employment and income were also named as important stabilizing factors which prevent substance use.

> "We need more access to help when a person is about to lose everything and end up homeless."
>
> *-Person with lived experience of substance use in Niagara*

Approaches to fostering social connectedness consistently emerged. Participants identified the significance of having listening, supportive people around them. Friendships, family, community events, community outreach programs, sports participation, positive youth development programs (e.g., Big Brothers Big Sisters), camps and churches were identified as examples of places people find social connectedness.

> "Don't be judgmental and address the cycle of abuse, trauma and substance use – we need to break the cycle."
>
> *-Person with lived experience of substance use in Niagara*

Participants frequently highlighted the need to recognize and manage trauma and other mental health concerns. A cycle of adverse childhood experiences (ACEs), trauma and drug use was described. Participants provided examples of this cycle, including inadequate treatment of "old wounds" of physical, sexual or emotional abuse leading to drug use, as well as children experiencing trauma related to the drug use of their parents using drugs to cope. They called for reducing wait times for mental health services, trauma recognition and treatment for children and youth (in schools and in the community) and one stop mental health and addiction treatment.

Theme Two: Work towards meeting the demand for new and existing client-centred services in Niagara

People with lived experience noted that although Niagara has many excellent services – drawing people from other parts of the province – existing services are not meeting demand and connections between services could be improved. Recommendations for improving client-centredness of services included increasing hours of availability, reducing wait times and providing interim services while waiting, providing incentives for participation, improving connections between detox and mental health treatment services and low, no, or sliding scale costs for programs and services.

> "When services don't connect with each other, it's frustrating. Centralized intake, services during wait times, better availability of services (times + location) are needed."
>
> *-Person with lived experience of substance use in Niagara*

Participants recommended establishing or enhancing the following services in Niagara: mobile crisis units, non-abstinence-based treatment programs, family-oriented rehabilitation services, emergency department diversion programs for mental health crises, a mental health treatment facility exclusively for adults, safe supply programs and drug-testing services. Decriminalization of possession of small amounts of any drug was also called for.

> "More doctors need to be taking the steps to be providing opioid substitution therapies as part of their general practitioner services."
>
> *-Person with lived experience of substance use in Niagara*

Participants emphasized the role of health care providers in both contributing to and curbing the opioid crisis. They recommended educating physicians regarding appropriate opioid prescribing. A referral requirement for treatment programs was noted as a barrier (some don't have a family physician). Participants encouraged more family doctors to prescribe opioid substitution therapy.

Theme Three: Support the development of a sense of purpose and skills for life in people in Niagara

People with lived experience insisted that a sense of purpose in one's life is critical for both preventing the development of problematic substance use and preventing relapse in people with substance use disorder. Examples of purpose-giving activities included employable skills training, satisfying work, effective sponsorship, skills for building new relationships, faith or belief systems, budgeting and money management skills training, time-occupying activities, hobbies, resilience skills training, and parenting skills training.

> "We got our sobriety, now what? There are no opportunities and nothing to look forward to. We forget how to live – sobriety is one thing, lifeskills – teach us how to live again."
>
> *-Person with lived experience of substance use in Niagara*

Participants highlighted the benefits of roles for peers with lived experience of substance use in prevention. They valued the credibility of peers in work with people currently using substances, as well as at-risk populations. Investing in peers as workers and educators and amplifying peers' stories were specifically recommended activities.

> "More apt to feel comfortable talking to someone who's been there, who understand what it's like to go through challenges."
>
> *-Person with lived experience of substance use in Niagara*

Theme Four: Reduce stigma and level up the understanding of reasons, risks and evidence-based interventions for substance use across Niagara

People with lived experience shared their experiences of stigma and a need to change the way people who use drugs are perceived and treated by health care professionals and the community more broadly. Participants spoke of counterproductive fear campaigns about people who use substances in the community, the importance of compassionate and nonjudgmental health care staff (emergency department and family practice staff specifically mentioned), the need for open conversation about substance use, and the significance of safe spaces for people who use substances.

> "Talk about it! Listen!"
>
> *-Person with lived experience of substance use in Niagara*

Participants challenged stigmatizing views they have experienced with more compassionate, nuanced ones they hoped to see shared in the community, including: drug use is not necessarily a choice, reasons for drug use are multifactorial even at the individual level, drug use affects all levels of society and not just people of lower socioeconomic status, the disease model of addiction, and people who use substances are people too and should be treated with respect and dignity.

> "Recognize that addicts are still people."
>
> *-Person with lived experience of substance use in Niagara*

Participants gave special importance to accurate, realistic information for youth who are making decisions about drug use, delivered in effective ways. They recommended enhancing school-based education about risks, effects, and potential life consequences related to experimentation, regular use and addiction. Participants emphasized teaching resilience and coping skills. Regarding targeted messaging, youth in grades 6 to 8 were highlighted as a population with critical information needs. Participants noted media as a relied upon source of information, for better and for worse. For example, media can be an effective tool for dissemination of life-saving harm reduction messages. Participants approved of Don't Use Alone and *Good Samaritan Drug Overdose Act* campaigns.

Conversely, glamorous and unrealistic portrayal of drug use and dealers in the media were viewed as problematic.

> "Programs that connect with youth. Connect them to nature and outdoors, hobbies, sports, life skills and resiliency, and how to handle stress."
>
> *-Person with lived experience of substance use in Niagara*

People with lived experience prioritized identifying the right people for effectively delivering education to particular audiences. People with lived experience recommended that peers share their stories with youth, people currently using substances and general public audiences.

> "Stigma comes from people whose lives have not been touched by addiction. Book smarts have a place, but peers are better."
>
> *-Person with lived experience of substance use in Niagara*

Commonly mentioned reasons people use drugs were curiosity, boredom, peer pressure, ease of access and frequent opportunities, depression, trauma, and lack of understanding of risk.

LIMITATIONS OF CONSULTATIONS WITH PEOPLE WITH LIVED EXPERIENCE IN NIAGARA

The views expressed in the working group's consultations with people with lived experience of substance use in Niagara are unlikely to represent everyone with lived experience of substance use in Niagara. By prioritizing the most frequently mentioned responses across all consultation sites to inform recommendations, the working group may lessen the influence of unrepresentative responses. The locations of consultations likely selected people experiencing more severe harms from substance use. The community consultation included people across the spectrum of severity of substance use.

METHODS OF THE OPENN MEMBER CONSULTATION

On November 15, 2018, OPENN members participated in a facilitated in-person consultation session in groups of four or five. Each group discussed responses to the following four questions:

1. What are your expectations for an OPENN substance use prevention strategy?

2. What challenges to your existing prevention initiatives make them less effective than they could be? What enhancements might make them more effective?

3. What new programs or initiatives do you think would support substance use prevention in Niagara?

4. If you are not currently engaged in prevention initiatives, what opportunities exist for you to incorporate substance use prevention into your work?

Each group's facilitator recorded responses for later analysis. Comments were coded based on key words and the overall sentiment of the comment. Two members of the OPENN Prevention and Planning working group independently thematically analyzed the collected responses, compared their analyses and came to agreement about a final analysis.

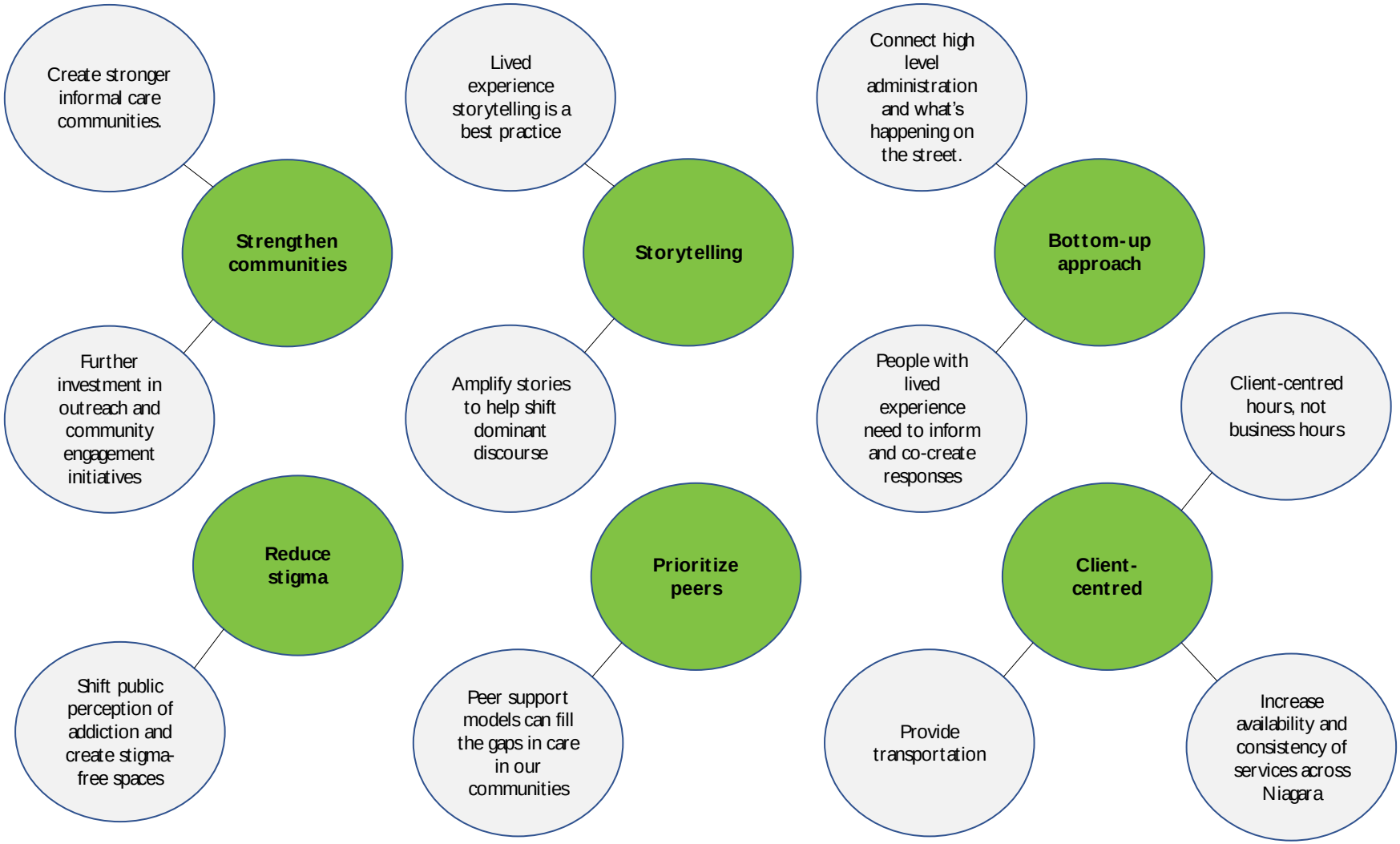
RESULTS OF THE OPENN MEMBER CONSULTATION

40 OPENN members participated in the in-person consultation. While the focus was on prevention and the majority of responses were centred there, the questions also inspired discussion in the domains of other pillars (i.e., harm reduction, treatment and enforcement).

A total of four key themes, with six subthemes in each (dark orange, green, bright orange and blue circles in the following four figures) were identified. Example responses supporting those themes are provided in gray circles.

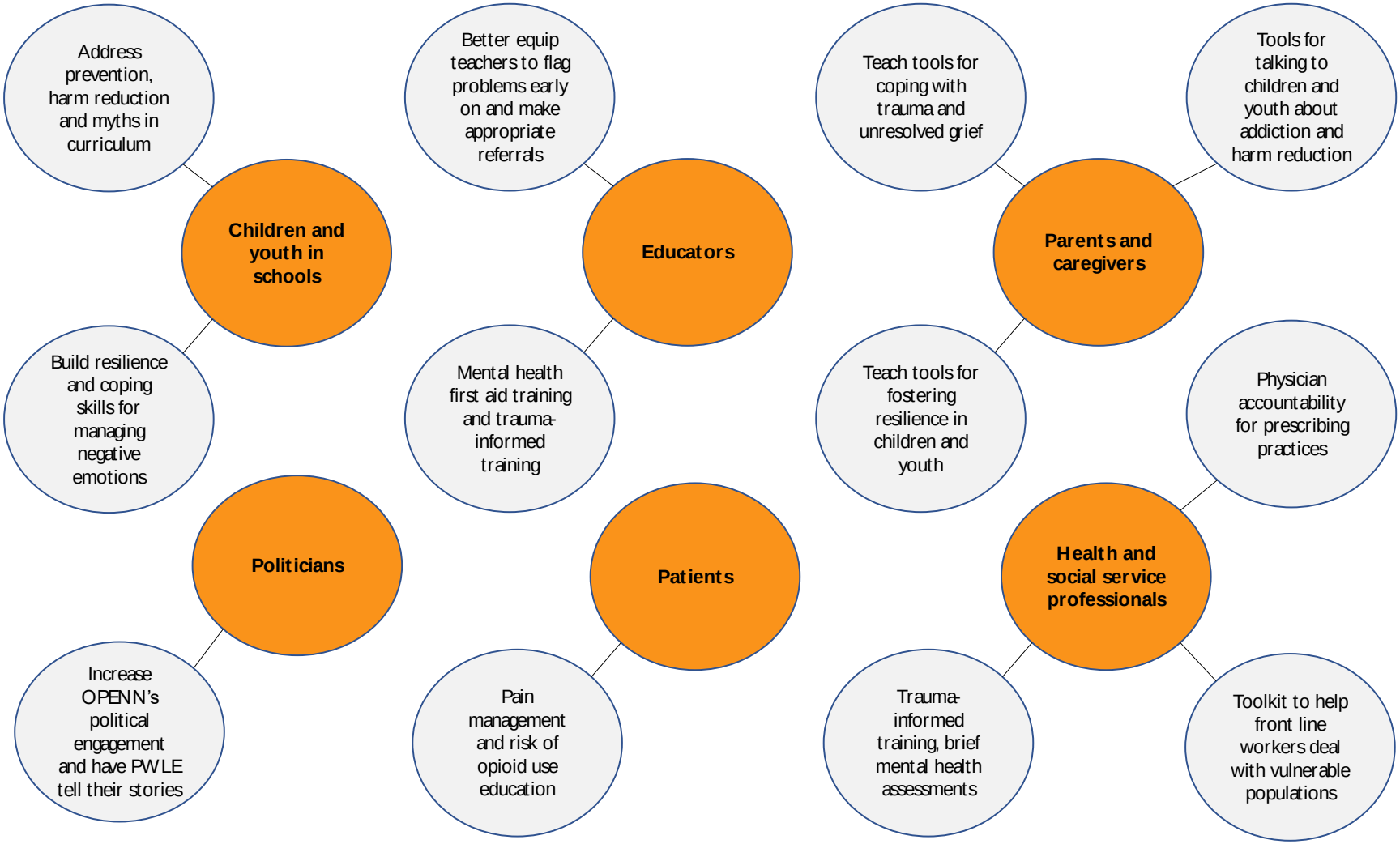
Key Theme: Partner effectively

OPENN members put forward a vision of a highly coordinated, sustainable, region-wide prevention strategy with careful attention to transitions.



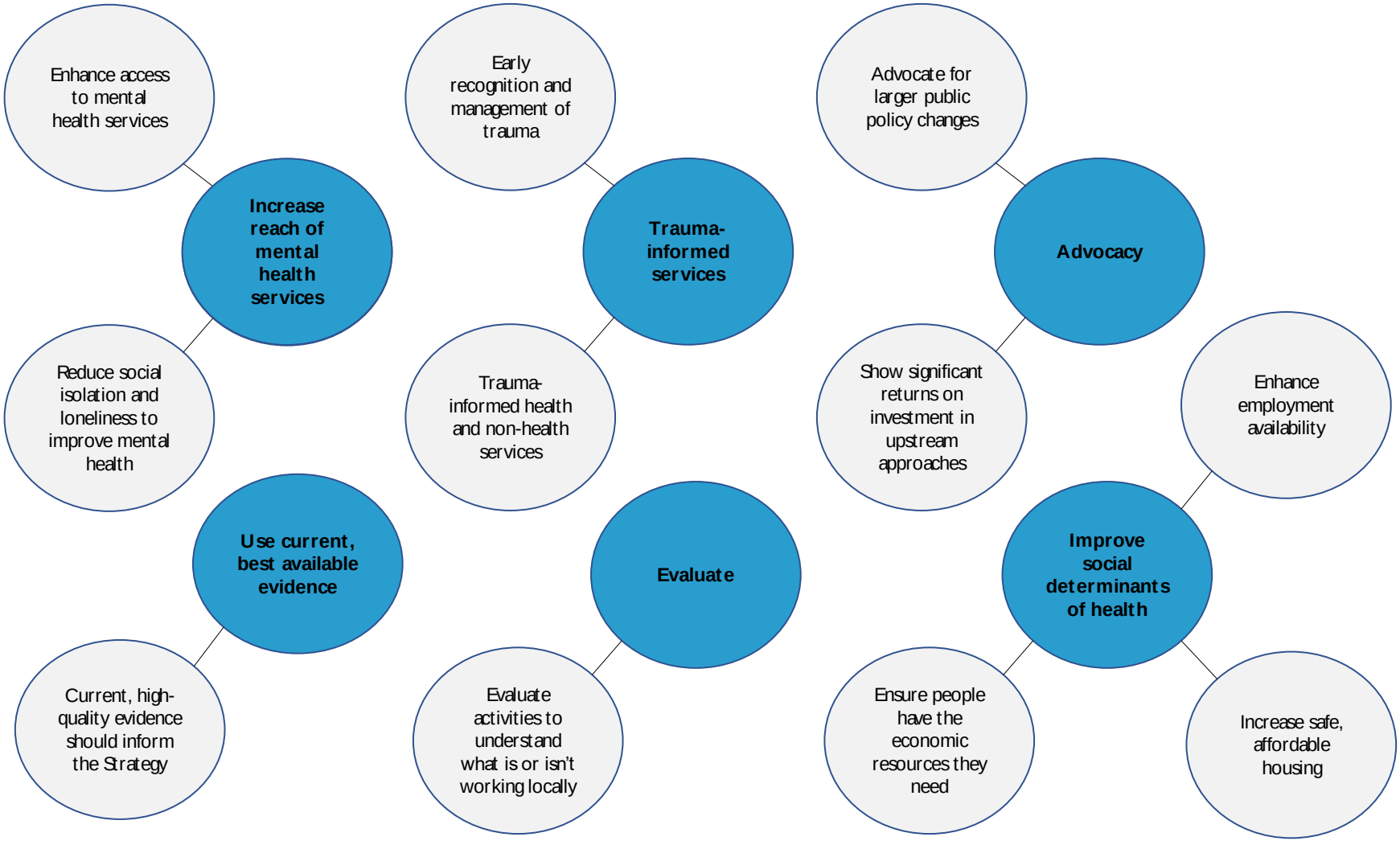
Key Theme: Prioritize people with lived experience and community engagement

OPENN members consistently identified the perspective, expertise, needs and stories of people with lived experience as crucial to seek and understand for the Strategy. Community engagement was also emphasized.



Key Theme: Develop an education strategy

OPENN members noted specific skills and knowledge that need better reach across Niagara: parenting, resilience in children and youth, evidence for harm reduction, correction of myths about substance use and a trauma-informed stance towards others.



Key Theme: Evidence-informed, upstream approaches

OPENN members wanted up-to-date, high quality, locally relevant evidence about what works and what doesn't for preventing substance use in the community to guide the Strategy. Upstream approaches were prioritized.

LIMITATIONS OF THE OPENN MEMBER CONSULTATION

Though the turnout of OPENN members at the consultation was relatively high, not every OPENN member was able to attend the day of the consultation. All OPENN members received the consultation questions in advance of the meeting and had opportunity to share responses via e-mail. The views expressed in the consultation may not represent the views of all OPENN members.

METHODS OF THE COMMUNITY CONSULTATION

Survey methods

Between October 1 and November 30, 2019, OPENN held a community consultation via an online survey to gain an understanding of how the general public perceives drug use in Niagara. The objectives of the community consultation were:

1. To identify the community's concerns related to drug use in Niagara
2. To assess the community's understanding and attitudes towards reasons for drug use
3. To explore the community's ideas on how to prevent drug use
4. To determine the community's support for proposed evidence-based prevention activities also supported by people with lived experience and OPENN members

The target population was residents living in Niagara 16 years of age and over. OPENN aimed for a representative sample in terms of age, gender, municipality and ethnic background.

OPENN's primary recruitment strategy was targeted Facebook advertising. Other methods of recruitment included OPENN member social media posts, staff-to-client and client-to-client word-of-mouth, physical ads in strategic locations, a media release and Niagara physician and workplace e-newsletters. The working group monitored the sample's representativeness in real time, adjusting the promotion strategy as needed (e.g., with Facebook ad targeting).

OPENN chose Survey Gizmo as its survey host because of its compliance with privacy and data management standards. As an incentive to participate, participants were eligible to win one of three $50 gift card prizes if they completed the survey.

Questions from the survey were adapted from several sources, including health entities in Canada who conducted their own consultations on substance use and published literature. The Strategy's prevention focus and OPENN's desire to gauge public readiness for evidence-based interventions also supported by people with lived experience and OPENN members made it necessary for the working group to create some questions. Indigenous persons and youth living in Niagara provided feedback that helped shape the final survey.

Analysis methods

Partially completed surveys were included if the respondent provided a response on at least the following four questions: age, interest in the issue, level of knowledge on substance use, and top three supports needed to implement prevention activities.

For the qualitative analysis, initial coding categories were created by completing a text query within NVivo 12 to identify common words and phrases. Coding was completed by a Statistician and Epidemiologist. Where disagreement occurred, a third individual was consulted. Comments were coded based on key words and the overall sentiment of the comment. Some comments were coded in multiple categories (i.e., proportions do not add to 100%).

RESULTS OF THE COMMUNITY CONSULTATION

Who responded?

2455 people living in Niagara fully completed the survey and 158 met the response threshold for being included, resulting in 2613 responses. Most respondents were female, 20 to 64 years of age, and had completed post-secondary education. The ethnic backgrounds of people who responded are summarized in Table 4 in the Appendix.

Age
16 to 19 years: **3.0%**
20 to 40 years: **42.2%**
41 to 64 years: **46.4%**
Over 65 years: **8.4%**

Gender
Female: **72.6%**
Male: **19.6%**
Prefer not to answer or skipped question: **7.4%**
Another gender: **0.5%**

Highest level of education
Less than high school: **3.5%**
Completed high school: **11.1%**
Some college or university: **17.3%**
College diploma or certificate, including trades: **32.8%**
University and/or post-graduate degree: **28.1%**
Prefer not to answer or missing: **7.2%**

Most survey respondents identified St. Catharines, Niagara Falls or Welland as their municipality of residence (Figure 13). A comparison of the response rate by municipality with the expected response rate based on the actual population in Niagara is presented in Table 5 in the Appendix.

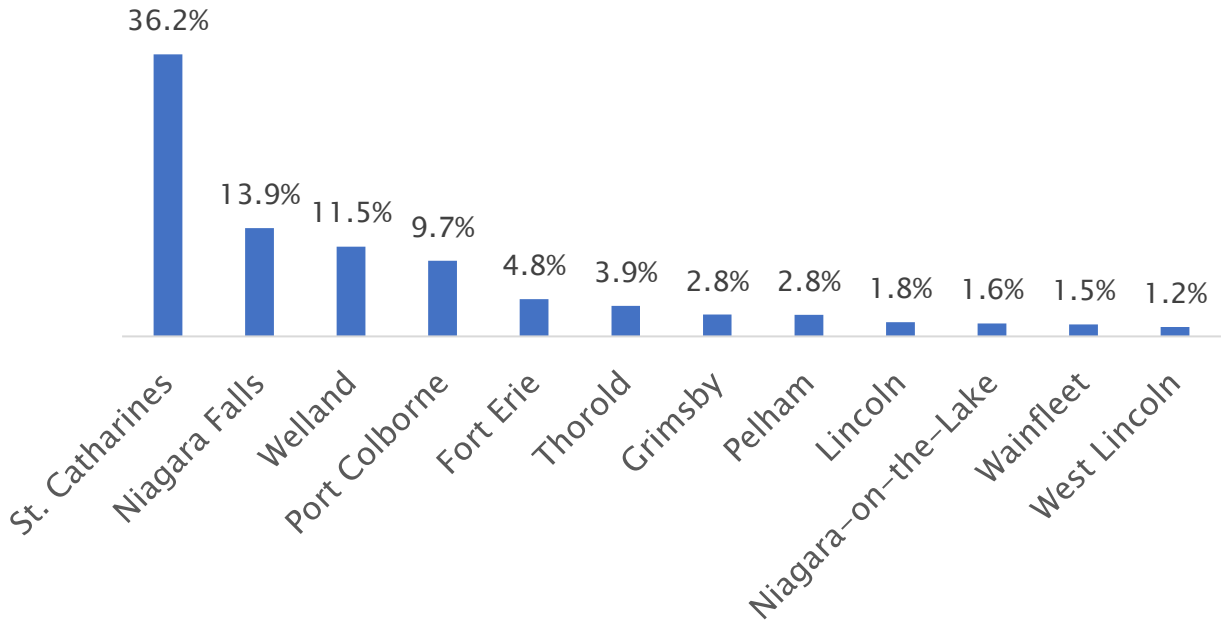
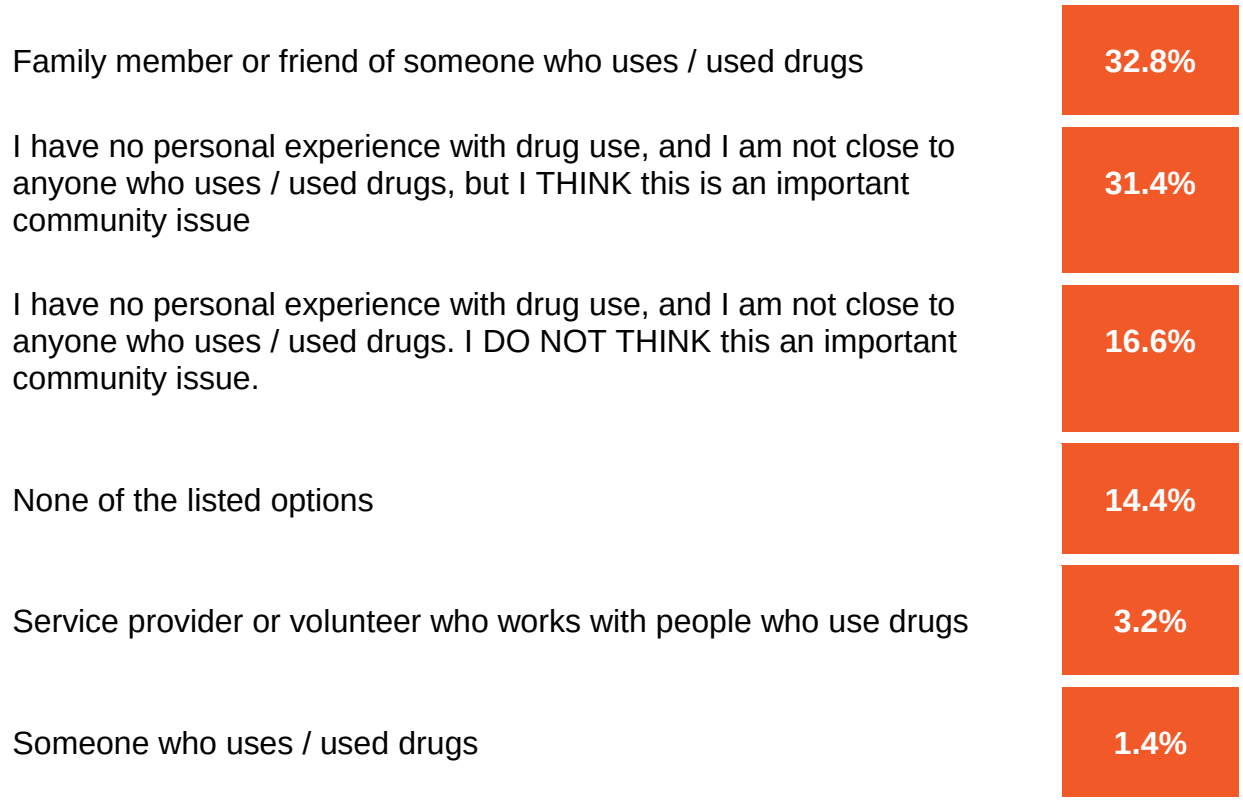


Figure 13
Municipality of residence, percent of people responding to the survey
Other, please specify, Missing, Refused to answer, and Prefer not to answer add to 8.3%

Interest in the issue of substance use in Niagara

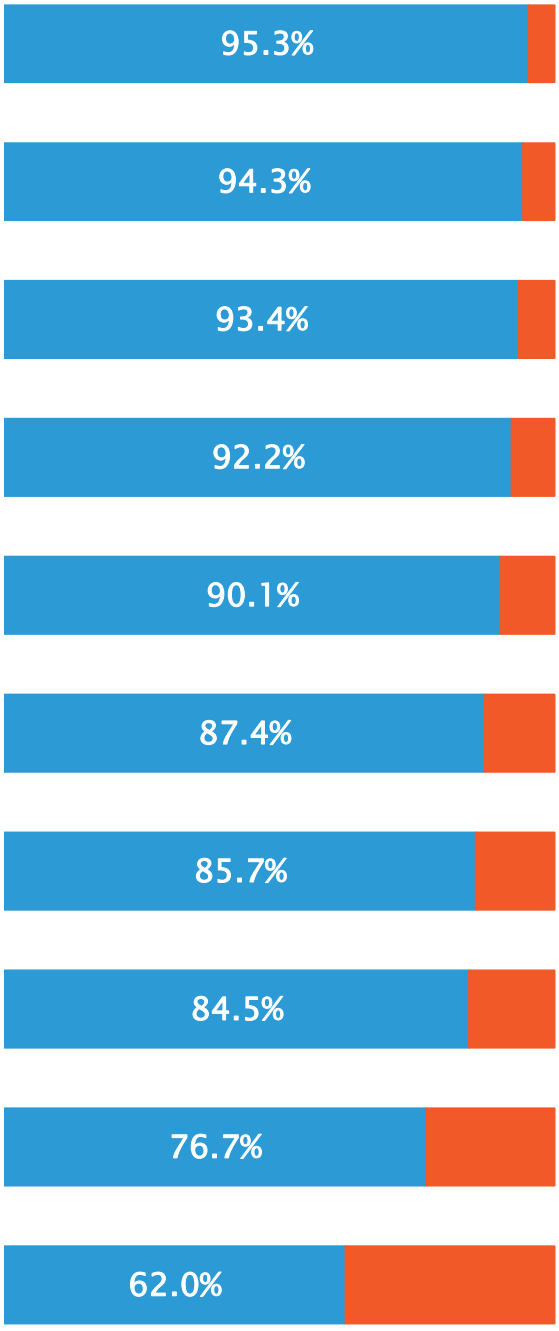
The survey asked people in Niagara about their interest in substance use prevention. Most respondents reported no personal experience with substance use and not being close to anyone who uses or used drugs, but differed in whether or not they thought substance use is an important community issue. Almost a third of respondents have a family member of friend who uses or used drugs.



Support for substance use prevention activities

One key objective of the survey was to assess the community's support for evidence-based prevention activities also supported by people with lived experience and OPENN members.

The **percent of people in Niagara who support or strongly support**:



The survey also asked respondents to rate the level of benefit these activities would have for preventing substance use in Niagara. The top three activities the community felt were most likely to have a large or very large level of benefit for preventing drug use in Niagara were:

89.4% better access to mental health and addiction services

88.9% more supports to adults and children experiencing trauma (an emotional response when a physical, sexual or emotional injury overwhelms us)

83.5% more employment, apprenticeships and career-building programs

In addition to understanding the level of community support for possible substance use prevention activities, OPENN wanted to know what people in Niagara felt was needed to ensure activities reached those that could benefit from them most.

People in Niagara identified the **top five** most important supports that need to be in place so people can benefit from prevention activities:

#1 Immediate access, such as no waiting lists

#2 Low or no cost

#3 Better coordination between service providers and agencies, so people don't "fall through the cracks"

#4 Everyone knows how and where to access programs

#5 Convenient locations, such as in places I already go to, or on bus routes

The survey asked youth in Niagara about who they most trust to talk to about drugs, their ideas for how to improve substance use education for people their age and how they would like to receive education about drugs. The survey also asked about the best ways to connect people to activities that prevent drug use, such as services or supports. Responses to these questions will help shape OPENN's prevention efforts going forward.

Community concerns

The **top community concerns** around drug use in Niagara are:

51.8%	Public Safety	• Fear or concern for community • Overall community safety • Crime – theft, violence, assault, gangs, drug deals, prostitution
34.8%	Drug Paraphernalia	• Improper disposal of needles or other drug paraphernalia in the community • Visibility of needles • Need for needle disposal bins • Concern for spread of diseases
23.8%	Exposure to Children and Youth	• Exposing children, youth, teenagers and young adults to drugs • Witnessing drug deals and seeing needles in parks and playgrounds
23.7%	Treatment and Support	• Lack of access to treatment and rehabilitation • Housing supports needed • Education and awareness to address misinformation
17.4%	Overdose and Death	• Overdoses • Death as a result of an overdose
16.8%	Poverty	• Homelessness • Lack of employment • Situations that affect whether someone experiences poverty or not
14.0%	Overall Health, Mental Health and Addiction	• Physical health and welfare of people who use drugs • Mental health • Addiction
12.0%	Visibility of Drug Use	• Seeing individuals use drugs in public • Witnessing drug deals in public

Other notable concerns include: effects on family and friend relationships (5.0%), concern about stigma toward individuals who use drugs (4.2%), the increasing number of individuals who use drugs (4.1%), access to a safe supply of drugs (3.9%), and people driving under the influence (2.6%).

Other comments that had a more negative sentiment: 6.5% were related to 'burden on the system', such as tax dollars spent and contributing to capacity issues in the healthcare system. 2.4% were a 'not in my backyard' (NIMBY) type of comment, particularly related to methadone clinics.

Community suggestions for preventing substance use in Niagara

When asked for additional ways to prevent substance use in Niagara, many respondents affirmed prevention activities proposed in the survey. Some commenters (n = 1,641) provided additional unique suggestions, including:

- **18.6%** Enhance policing and enforcement
- **14.1%** Improve situations that may contribute to substance use: affordable housing shortage, employment opportunities, implementing living wage or increasing the minimum wage
- **9.6%** Create or improve awareness of free or affordable activities for children, youth and families
- **3.2%** Foster opportunities for positive relationships with others (friends, family, peers) and ensure social bonding is maintained
- **2.7%** Address trauma or ensure a trauma-informed lens

Example comments from community members

> We need to make it clear that there are other options for people to heal & get support, to have fun and to cope... Then back that up with ACTUAL services, programs, options, outlets for fun (that are very affordable). The supports have to be where people need them and be available when they need them!

> This is a growing issue across many communities. Perhaps investigating the methods utilized by other cities or regions may prove useful. More broadly, efforts should be made to educate the general public about drug use. In order for people to empathize with the issue we should focus on the people involved/affected and not only on the drugs themselves. I think there is a tendency to dehumanize people who use drugs or people experiencing homelessness.

> There is [sic] so many reason[s] why we have drug problems out there. This is not a Social Economical issue, it can happen to anyone and in any country. We need to start from the top, why is it so easy to get drugs/prescription. Too many prescriptions been written out there, national pharmacy data and sharing should be available. Small Towns need to be up

to speed on health prevention like big cities. More money for outreach and prevention. I worked in [a] homeless shelter and those living in poverty for years here in Canada and abroad, we all have [the] same issues, people are people. So from the Federal perspective and responsibility, looking at big drug makers, pharmaceutical companies, they need to take more responsibilities [sic], as well as pharmacies and doctors, on the amount of opioids, pain killers they give out. Drugs are getting to our young people, harsher penalties to drug suppliers and dealers who are [im]prisoning our communities. More community, police and politicians partnership.

The greatest asset is to work with each other and build relationships. The greatest downfall is condescension, ignorance and arrogance. Offer not only assistance to those who need it but offer volunteer opportunities for those who want to help. I very rarely hear about ways to get involved. The more people can get involved and be taught to help one another out and to discuss difficult situations the better. Just as important to help out people who use substances is the importance to recruit other members of the community to lend a hand.

The face of an addict is not always what you expect ... addiction spans across all demographics regardless a person's economic status, cultural background, family or community connections. Accessibility to supports and resources need to be available to all! Addiction needs to be better understood by the general public through a stronger campaign of education and de-stigmatization.

I would mention two things: many individuals need to get help ASAP, and in a real way, that is both physically and financially accessible, and that doesn't seem to be the case here in Niagara. The other is that there is a disturbingly ignorant trend in Canada to blame addicts and demonize them, often from politicians of a 'religious' nature. This needs to be opposed, as it only hurts more people, and makes the problem worse. Prohibition did not work, and only a fool does the same thing again and expects different results.

I think there needs to be more information related to the public regarding safe injection sites. There's a lot of curiosity and resentment surrounding this topic. People believe this money could be better spent elsewhere, including myself. Make public the successes due to the safe injection site. We want to hear firsthand from the people that use it. Another reason there is a stigma or why people don't support these sites is because we are so removed from them. For someone who has never been touched by this issue, it will not be worthy of their time. I'm not sure this is something that will ever change, regardless of how much information or education is made available. To some, diseases such as cancer, diabetes, heart disease will always be a more worthy cause for their support.

Do not expect people to quit problematic behaviours when they do not have consistent income, stable and secure housing, mental health and system navigation support while in a judgmental environment. Give people what they need FIRST (secure and stable housing, living wage, etc.) and THEN meet them where they are to help them work towards recovery.

LIMITATIONS OF THE OF THE COMMUNITY CONSULTATION

Using social media recruitment and an online survey method helped the working group to obtain a large sample efficiently. Facebook recruitment may have led to overrepresentation of certain groups in the survey, namely females and people 20 to 64 years of age. Some municipalities also appeared overrepresented. Adjusting ad targeting somewhat improved representativeness. An online survey may have presented barriers to those with lower computer literacy or lack of internet access. We offered paper surveys to reduce this barrier. Though a substantial range of opinions were shared, the views expressed in the consultation may not represent the views of all people living in Niagara.

RECOMMENDATIONS

ABOUT THE RECOMMENDATIONS

The following recommendations for OPENN's Substance Use Prevention Strategy represent what resonated most across consultations with people with lived experience of substance use in Niagara, OPENN members, people living in Niagara who responded to the survey, and a review of published literature about primary and secondary prevention of substance use. For each of the following nine recommendations, the working group identify several key recommended actions. Most recommended actions present specific primary or secondary substance use prevention activities, while others recommend ways to facilitate the success of recommended prevention activities.

Primary prevention decreases problematic substance use before it starts

Secondary prevention identifies and manages early problematic substance use

Readers may notice that some of what OPENN heard in consultations does not fall under primary or secondary prevention in the conventional sense of those terms. Two such topics are very important in Niagara right now and were mentioned frequently enough that they cannot be ignored: stigma reduction and discarded needles. The working group provide recommendations regarding these two topics as well.

Returning to the social-ecological prevention model for guiding action, recommendations include activities that affect societal, community, relational and individual levels. OPENN believes that a Strategy that spans all four levels gives Niagara its best chance of preventing problematic substance use in the community.

OPENN SUBSTANCE STRATEGY: PREVENTION RECOMMENDATIONS

1. Where local programs are key influences on social determinants of health (e.g., situations such as unstable income or housing), boost their resources and reach.

1.1 Review current practices for identifying people presenting to OPENN member organizations in situations such as living in poverty, homelessness or unemployment and standardize an approach for linking to best-fit services.

1.2 Build on the success of the Niagara Poverty Reduction Network's Living Wage program to expand the number of living wage employers in Niagara.

1.3 Find practical ways for OPENN to assist the *A Home for All: Niagara's 10-year Community Action Plan to Help People Find and Keep Housing Affordable* reach its goals. Support initiatives for reducing first-time housing loss among high-risk groups (especially youth), preventing housing loss among low- or moderate-income households experiencing short-term financial instability, and providing housing with supports for people experiencing chronic homelessness.

2. Where federal and provincial governments hold primary influence on social determinants of health (e.g., situations such as unstable income or housing) or resources, advocate as a Network for high-impact changes in policy and resource allocation that can prevent drug use.

2.1 Advocate for evidence-based income strategies with positive effects on health and substance use.

2.2 Advocate for increased funding and resources for mental health and addictions services in Niagara.

2.3 Advocate for increased funding and resources for *A Home for All: Niagara's 10-year Community Action Plan to Help People Find and Keep Housing Affordable.*

3. Support all people in Niagara knowing and keeping a sense of purpose and social connection.

3.1 Create a working group for implementing social participation interventions locally to improve social connectedness and reduce loneliness across all ages.

3.2 Increase reach of existing after-school programs for children and youth, such as recreational, community sports and social programs. Form public-private partnerships to secure funding and work with non-profit organizations to secure other resources (e.g., space) to provide programs at low or no cost.

3.3 Build on the success of the Queenston Roundtable and establish resident-led Roundtables in other priority communities for increasing community ownership and connectedness.

3.4 Invest in other purpose-giving activities requested by people with lived experience of substance use in Niagara: skills for building new relationships, cultivation of religious faith or belief systems, employable skills training, budgeting and money management skills training, hobbies, etc.

4. Put peers in the centre of OPENN Substance Use Prevention Strategy activities as co-creators, credible guides and storytellers.

4.1 Involve peers as co-creators of substance use prevention activities arising from this Strategy.

4.2 Amplify peers' stories through a Niagara storytelling project and share widely to shift public perceptions of people with lived experience of substance use.

4.3 Expand investment in peers as workers. Establish the *British Columbia Centre for Disease Control Peer Payment Standards* as a local standard for any organization employing peers. Use local living wage as a pay standard.

5. Ensure parents in Niagara have the support they need for the healthy development of their children. Enhance programs that equip children, youth and young adults with skills and knowledge for self-determination about their substance use and other life choices.

5.1 Use OPENN client networks to extend the reach of Niagara Region's Parenting Strategy and existing evidence-based parenting skills training programs. Explore feasibility of expanding evidence-based home visiting and skills coaching programs (e.g., Nurse Family Partnerships).

5.2 Work with school boards, principals, teachers and support staff on existing substance use and addiction curriculum to ensure skills training is emphasized (e.g., refusal skills, decision-making skills, social skills). Pilot use of student peers to deliver training where appropriate. Advocate as a Network provincially regarding curriculum where appropriate.

5.3 Work with school boards, principals, teachers and support staff to review current resilience and healthy coping skills training for children and youth in schools and build in evidence-based enhancements where indicated.

5.4 Work with organizations providing counseling services in Niagara, human resource departments and university health staff to explore opportunities for screening and brief interventions for substance use in workplaces and universities.

6. Support developing a non-fragmented mental health and addictions treatment-as-prevention system in Niagara.

6.1 Bring learnings from Strategy consultations to Niagara Ontario Health Team planning processes and the Niagara Region Mental Health & Addictions Transformation Table. Drive progress towards timely and seamless mental health and addictions care in Niagara and address areas of system vulnerability identified in Strategy consultations (e.g., transition between adolescent and adult services).

6.2 Explore opportunities to offer motivational interviewing-based, personalized feedback and CBT-based substance use secondary prevention interventions in Niagara, in groups and/or online.

6.3 Provide training for early identification of trauma in children and youth in schools and promote clear referral pathways to appropriate professional management.

6.4 Provide low or no cost support to adults who have recently experienced trauma to prevent development of trauma-related disorders.

7. Partner effectively to approach true client-centred services in Niagara.

7.1 Improve knowledge sharing between OPENN members for effective strategies for managing wait times, providing meaningful resources for clients waiting for services, optimizing hours of availability and low, no, or sliding scale costs for programs and services.

7.2 Explore models used effectively in other areas requested by people with lived experience of substance use in Niagara: mobile crisis units, non-abstinence based treatment programs, family-oriented rehabilitation services, emergency department diversion programs for mental health crises, a mental health treatment facility exclusively for adults, safe supply programs and drug-testing services.

7.3 Use social marketing to ensure everyone who would benefit from a service in Niagara knows how and where to access it.

7.4 Work with specific populations (e.g., Indigenous, newcomers and Francophone) to provide culturally safe and appropriate services.

8. Work with other networks to coordinate a truly comprehensive substance use prevention system.

8.1 Review OPENN and non-OPENN substance use prevention activities in Niagara annually. Identify and address gaps.

8.2 Connect with leads of Family Health Teams, Groups and Organizations, Community Health Centres, and prescribers in other settings in Niagara (e.g., chronic pain management, psychiatry and emergency departments), to better understand the state of local opioid prescribing practices, pain management, patient opioid use education and opioid substitution therapy prescribing. With an awareness of the potential effects of altering the availability of legal prescription opioids, collaborate on promising prescriber-related prevention activities.

8.3 Evaluate prevention activities and use results to optimize substance use prevention activities in Niagara.

OPENN SUBSTANCE STRATEGY: ADDITIONAL RECOMMENDATIONS

9. Address issues that challenge a compassionate response to people who use substances in our community.

9.1 Provide tailored stigma reduction training to groups identified in consultations: healthcare workers, media personnel, teachers, law enforcement and the general public.

9.2 Evaluate the St. Catharines discarded needle and syringe tracking pilot and expand to include Niagara Falls and Welland if indicated. Use geospatial data to determine strategic locations for discarded needle and syringe recovery efforts, safe disposal sites and potential supervised consumption sites.

MOVING FROM RECOMMENDATIONS TO ACTION

It is not possible for OPENN to address all of the recommendations. In the months ahead OPENN members will review the report findings and commence a prioritization process to support ongoing work and possibly initiate work on implementing recommendations from the report. To facilitate prioritization of the recommendations, the Prevention and Planning working group have scored the recommendations according to the following criteria:

Good quality published evidence supports the activity.

People with lived experience of substance use in Niagara support the activity.

There are OPENN members and/or other organizations in Niagara that are ready to collaborate on the activity AND successful implementation is feasible.

The activity has the potential to change socioeconomic factors, change the context in which people make decisions or is a long-lasting protective intervention.[35]
The activity has a high likelihood of achieving its intended outcome.

The community supports the activity.

OPENN's Steering Committee will undertake a structured prioritization process using the scored recommendations and other criteria in Fall 2020. People and organizations with expertise in Niagara are already working hard in areas of many of the recommendations. OPENN will map recommendations with partners in the community who may be planning or are already leading work in the area of a recommendation. Best fit of leadership on particular recommendations (i.e., OPENN leading versus other organizations leading) will be determined during these discussions.

Work will then begin on recommendations deemed highest priority for OPENN to plan and implement. When the prioritization process is complete, an Appendix to this report describing the prioritization experience, mapping of recommendations with stakeholders, priority recommendations for OPENN and next steps for planning and implementation will be made publicly available. OPENN will establish timelines and track its progress (e.g., via a dashboard) on moving from recommendations to action.

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APPENDIX

Table 1 - Prevention interventions in school settings

Review	Population	Setting	Intervention	Follow-up period	HEQATRA score[13]	Main findings
Faggiano 2014[17]	Mostly grade 6 and 7 students	Elementary schools	Education and skills training	0-10 years	9	Social competence training ⬇ any drug use at < 12 months (RR 0.27; 95% CI: [0.14, 0.51])* Social competence and social influence training ⬇ cannabis use at 12+ months (RR 0.83; 95% CI: [0.69, 0.99])* ⬇ any drug use at <12 months (RR 0.76; 95% CI: [0.64 to 0.89])*
Georgie 2016[14]	11-21 year-old students	Mostly high schools, universities	Peer-led education and skills training	2 weeks-27 months	8	⬇ alcohol use (OR = 0.80, 95% CI: [0.65–0.99])* ⬇ cannabis use (OR = 0.70, 95% CI: [0.50–0.97])*
Kwan 2014[18]	High school and university students	High schools, universities	Sports participation	6 months - 16 years	7	⬆ alcohol use (14/17 studies) ⬇ cannabis use (4/8 studies) ⬇ illicit drug use (4/5 studies)
Onrust 2016[15]	Grade 1-12 students	Elementary and high schools	Education and skills training (program characteristics)	Most <6 months	7	Effective program characteristics varied with age, many characteristics reviewed, see original article

Review	Population	Setting	Intervention	Follow-up period	HEQATRA score[13]	Main findings
Tanner-Smith 2013[16]	11-25 year-old students	Mostly high schools, universities	Brief interventions based on MI or CBT	0-80 weeks	9	⬇ any illicit drug use ($\bar{g}$ = 0.13, 95% CI: [0.03, 0.22])* ⬇ cannabis use ($\bar{g}$ = 0.15, 95% CI: [0.02, 0.28])* ⬇ alcohol use ($\bar{g}$ = 0.17, 95% CI: [0.05, 0.30])*

*p<0.05 or 95%CI does not contain null hypothesis value, ▲ = no change in stated outcome, ⬆ = increase in stated outcome, ⬇ = decrease in stated outcome
HEQATRA Score = Health Evidence Quality Assessment Tool - Review Articles Score
RR = relative risk, OR = odds ratio, d = Cohen's d, $\bar{g}$ = Hedge's g, SMD = standard mean difference, ES = effect size, Mdn = median, 95% CI = 95% Confidence Interval
MI = Motivational Interviewing, CBT = Cognitive-Based Therapy

Table 2 - Internet-based, text-message, or telephone prevention interventions

Review	Population	Setting	Interventions	Follow-up period	HEQATRA score[13]	Main findings
Gulliver 2015[19]	18-25 year-old university and college students	Internet	Personalized feedback	1-3 months	8	▲ cannabis use
Hoch 2016[20]	17-19 year-old students	Internet	Personalized feedback, MI and CBT-based interventions	3 months	9	⬇ cannabis use (mean difference = –4.07; 95% CI: [–5.80, –2.34])*
Jiang 2017[24]	General population	Telephone, internet, text and group	MI-based interventions	8 weeks to 1 year	8	⬇ alcohol use Telephone (2/3 studies), internet (2/2 studies), text-messaging (1/1 study), group MI (1/4 studies) ⬇ cannabis use Telephone (1/1 study) ▲ illicit drug use Group MI (3/3 studies), internet (2/2 studies)
Mason 2015[23]	12-29 year-olds	Text-messaging	MI and brief interventions	1-12 months	7	▲ alcohol use (2/3 studies)
Olmos 2018[21]	13-30 year-olds	Internet	Personalized feedback, MI and	1-12 months	9	⬇ cannabis use (SMD: -0.19, 95% CI: [-0.26, -0.11])*

Review	Population	Setting	Interventions	Follow-up period	HEQATRA score[13]	Main findings
			CBT-based interventions			⬇ other substances (SMD: -0.27; 95% CI: [-0.46, -0.08])*
Tait 2013[22]	≥11 year-olds	Internet	Education and skills training, MI and CBT-based interventions (individual and family)	0-12 months	8	⬇ cannabis use (g=0.16, 95% CI: [0.09, 0.22])*

*p<0.05 or 95%CI does not contain null hypothesis value, ▲ = no change in stated outcome, ⬆ = increase in stated outcome, ⬇ = decrease in stated outcome

HEQATRA Score = Health Evidence Quality Assessment Tool - Review Articles Score

RR = relative risk, OR = odds ratio, d = Cohen's d, $\tilde{g}$ = Hedge's g, SMD = standard mean difference, ES = effect size, Mdn = median, 95% CI = 95% Confidence Interval

MI = Motivational Interviewing, CBT = Cognitive-Based Therapy

Table 3 - Prevention interventions in multiple settings

Review	Population	Setting	Intervention	Follow-up period	HEQATRA score[13]	Main findings
Allara 2015[30]	<26 years of age	General community	Mass media campaigns using radio, television, print and/or the internet	6 months to 4.7 years	10	▲ illicit drug use (meta-analysis of 5 RCTs) ▲ methamphetamine use (5 Meth Project studies)
Davis 2017[27]	18-25 year-olds	Colleges, not-for-profit organizations, hospitals, emergency rooms	Mobile or internet-based, MI-based, normative or personalized feedback interventions	Unclear	8	MI-based prevention interventions ⬇ alcohol or drug use (d= 0.20, 95% CI: [0.04, 0.36])* Personalized feedback ⬇ alcohol or drug use (d= 0.13, 95% CI: [0.04, 0.20])*
Foxcroft 2016[28]	15-24 year-olds	Universities, colleges, healthcare locations, community and private organizations	Individual and group MI sessions	1 month to 4 years	9	⬇ alcohol use (SMD−0.11, 95%CI: [−0.15,−0.06])* ▲ binge drinking, average Blood Alcohol Concentration
Hodder 2017[26]	5-18 year-old students	Schools, families, and community-based settings	Universal school-based resilience interventions	Mostly ≥1 year	10	⬇ illicit substance use (OR: 0.78, 95%CI: [0.60-0.93])* ▲ alcohol or tobacco use

Review	Population	Setting	Intervention	Follow-up period	HEQATRA score[13]	Main findings
Melendez-Torres 2016[29]	11-18 year-olds	Community-based settings outside of normal school hours	Positive youth development interventions	9 months to 6 years	10	▲ substance use ▲ illicit drug use, alcohol or smoking individually
Norberg 2013[31]	<24 years of age	Schools, families, community organizations, medical clinics	Social, resilience, decision-making and drug refusal skills training	Mostly 1-3 years	8	⬇ cannabis use (9/15 universal programs, d= 0.08 to 5.26, Mdn= 0.36)* ⬇ cannabis use (6/10 targeted programs [e.g., by gender], d= 0.07 to 0.74, Mdn= 0.20)*
Stockings 2016[32]	10-24 year-olds	Schools, work, universities, community, primary care, emergency departments, hospitals	Policy, community and individual prevention, harm reduction and treatment interventions	Unclear	6	⬇ problematic alcohol use or injury or harm: Minimum age, taxation, skills-based parenting interventions, screening and brief interventions in university or work settings, random roadside drug testing ⬇ problematic drug use or injury or harm: Skills-based parenting interventions, reduction of injection-related harms
Stockings 2018[33]	Children, youth, young adults	Schools, work, community, families	Community interventions	Mostly 7 days, 30 days or 1 year	8	⬇ alcohol use or harms: Parental education (8/14 studies), responsible alcohol service training (6/12

Review	Population	Setting	Intervention	Follow-up period	HEQATRA score[13]	Main findings
						studies), enhanced enforcement of drink-driving laws (5/6 studies), public health messaging (11/17 studies), school-based education and skills training (6/12 studies), alcohol-free events and activities (7/14 studies), screening and brief intervention (3/4 studies)
Van Ryzin 2016[25]	11-12 and 20-21 year-olds	Schools, families	Family-based behaviour, problem-solving and relationship programs	Unclear	8	⬇ alcohol, tobacco, cannabis, illicit drugs use (ES= .31, CI not reported)

*p<0.05 or 95%CI does not contain null hypothesis value, ▲ = no change in stated outcome, ⬆ = increase in stated outcome, ⬇ = decrease in stated outcome

HEQATRA Score = Health Evidence Quality Assessment Tool - Review Articles Score

RR = relative risk, OR = odds ratio, d = Cohen's d, $\tilde{g}$ = Hedge's g, SMD = standard mean difference, ES = effect size, Mdn = median, 95% CI = 95% Confidence Interval

MI = Motivational Interviewing, CBT = Cognitive-Based Therapy

Table 4 - Survey respondents' ethnic backgrounds

Responses	Frequency	Percent
White - North American (e.g., Canadian, American)	1558	59.6%
White - European (e.g., English, Italian, Portuguese, Russian)	591	22.6%
First Nations	34	1.3%
Latin American (e.g., Argentinean, Chilean, Salvadoran)	30	1.2%
Mixed heritage (e.g., Black - African and White – N. American)	27	1.0%
Another background	25	0.96%
Asian - South (e.g., Indian, Pakistani, Sri Lankan)	22	0.84%
Metis	21	0.80%
Asian - East (e.g., Chinese, Japanese, Korean)	17	0.65%
Asian - South East (e.g., Malaysian, Filipino, Vietnamese)	12	0.46%
Middle Eastern (e.g., Egyptian, Iranian, Lebanese)	12	0.46%
Black - North American (e.g., Canadian, American)	10	0.38%
Self-identify as Indigenous	9	0.34%
Black - Caribbean (e.g., Barbadian, Jamaican)	7	0.27%
Black - African (e.g., Ghanaian, Kenyan, Somali)	6	0.23%
Don't know / unsure	<5	-
Indian - Caribbean (e.g., Guyanese with origins in India)	<5	-
Missing	98	3.8%
Prefer not to answer	66	2.5%
Refused to answer	63	2.4%

Table 5 - Comparison of the survey response rate by municipality with the expected response rate based on the actual population in Niagara

Municipality	Population Estimate	Proportion of Total Niagara Population %	Proportion of OPENN Community Consultation Respondents %
Fort Erie	30,710	7%	4.8%
Grimsby	27,314	6%	2.8%
Lincoln	23,787	5%	1.8%
Niagara-on-the-Lake	17,511	4%	1.7%
Niagara Falls	88,071	20%	13.9%
Pelham	17,110	4%	2.8%
Port Colborne	18,306	4%	9.7%
St. Catharines	133,113	30%	36.2%
Thorold	18,801	4%	3.9%
Wainfleet	6,372	1%	1.5%
Welland	52,293	12%	11.5%

Data source: Statistics Canada, 2016 Census of the Population. All data references are for the Census Division of Niagara.