



Cups for COVID: rapid implementation of a harm reduction initiative to support populations experiencing homelessness during the COVID-19 pandemic

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Abstract

Setting As of June 10, 2020, 37 people experiencing homelessness or unstable housing in Calgary, Alberta, had developed lab-confirmed COVID-19. Spread occurred despite standard outbreak controls at affected shelter and supportive housing sites. Among these 37 cases, drink sharing was frequently identified as a modifiable mode of possible transmission. We collaborated with emergency shelters, a supportive housing site, and street and encampment outreach groups, using mixed service delivery by health staff, non-profits, and peers with lived experience with homelessness.

Intervention To empower individuals to decrease COVID-19 transmission using a harm reduction approach, we provided disposable paper cups to service providers for distribution to clients. Service providers tracked the number of cups distributed. To assess effectiveness, we interviewed staff and peers who distributed the cups.

Outcomes Cup distribution was highest among populations with higher rates of alcohol use, and the intervention was well received by people who drink alcohol regularly, providing unique opportunities to promote COVID-19 awareness and safer drinking practices. Providers to these populations reported enthusiastic client engagement and repeat requests for cups for safer drinking. Intervention usefulness was limited in contexts with low alcohol consumption and in the absence of paired COVID-19 education. Provider reports suggest appropriate disposal of these cups after use.

Implications Disposable cups are a novel, rapidly implementable, low-cost harm reduction tool to empower people experiencing homelessness to reduce the risk of COVID-19 transmission due to drink sharing, ideally as part of a larger harm reduction and community education strategy.

Résumé

Lieu Au 10 juin 2020, trente-sept (37) personnes sans abri ou vivant en logement instable à Calgary (Alberta) avaient contracté une infection par la COVID-19 confirmée en laboratoire. La maladie s’est propagée malgré les mesures types de contrôle des éclosions dans les refuges et les logements supervisés touchés. Parmi ces 37 cas, le partage de boissons a souvent été défini comme un mode de transmission modifiable possible. En collaboration avec des refuges d’urgence, un complexe de logements supervisés et des groupes menant des activités de proximité dans la rue et les campements, nous avons assuré une prestation de services mixte par des personnels de santé, des organisations sans but lucratif et des pairs ayant une expérience vécue de sans-abrisme.

Intervention Pour donner à chaque personne les moyens de réduire la transmission de la COVID-19 selon une approche de réduction des méfaits, nous avons fourni aux dispensateurs de services des gobelets en papier jetables à distribuer à leurs usagers. Les dispensateurs ont fait un suivi du nombre de gobelets distribués. Pour évaluer l’efficacité de l’initiative, nous avons interviewé le personnel et les pairs ayant distribué les gobelets.

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Résultats Le nombre de gobelets distribués a été le plus élevé dans les populations ayant des taux élevés de consommation d'alcool, et l'intervention a été bien accueillie par les personnes qui consomment régulièrement de l'alcool; elle a offert des occasions uniques de faire de la sensibilisation à la COVID-19 et de promouvoir une pratique de consommation de boissons à moindre risque. Les intervenants auprès de ces populations ont fait état d'une participation enthousiaste des usagers et de demandes répétées de gobelets pour boire sans s'exposer au risque de contracter la maladie. L'utilité de l'intervention a été limitée dans les contextes de faible consommation d'alcool et en l'absence d'une sensibilisation conjointe à la COVID-19. Selon les rapports des dispensateurs de services, les gobelets ont été correctement éliminés après usage.

Conséquences Les gobelets jetables sont un nouvel outil de réduction des méfaits à prix abordable qui peut être mis en œuvre rapidement pour donner aux personnes aux prises avec le sans-abrisme les moyens de réduire le risque de transmission de la COVID-19 lorsqu'elles partagent des boissons, idéalement dans le cadre d'une stratégie de réduction des méfaits et de sensibilisation de proximité.

Keywords Harm reduction · Alcohol use · Community outreach · Homelessness · Unstable housing · Infection prevention and control · COVID-19 · Outbreak management

Mots-clés Réduction des dommages · consommation d'alcool · engagement communautaire · sans-abrisme · logement instable · prévention et contrôle des infections · COVID-19 · gestion d'épidémies

Introduction

Official counts from Calgary, Alberta, estimate that 2911 individuals experienced homelessness and 1374 used emergency shelters in 2018 (Turner Strategies 2018). Multiple factors place these populations at higher risk of widespread COVID-19 outbreaks and severe clinical illness. Crowded living quarters at emergency shelters predispose to increased respiratory pathogen transmission (Aligne 2016). Lack of available and affordable housing is a significant barrier to quarantine and isolation, which are some of the main non-pharmacologic public health interventions available to stem outbreaks (An Pan 2020). Forty percent of Albertans experiencing homelessness are over age 45 (Turner Strategies 2018), and people experiencing homelessness have higher rates of chronic disease and addictions (Fazel et al. 2014). Mortality from COVID-19 increases after age 50 (Zhao et al. 2020) and with presence of medical comorbidities (Wang et al. 2020), which places individuals experiencing homelessness at a significantly increased risk of severe illness.

As of June 10, 2020, there were 37 lab-confirmed COVID-19 positive individuals from shelters and supportive housing sites in Calgary. Outbreaks were officially declared in a number of facilities supporting these clients, including eight group homes, seven shelters, and two supportive housing sites. As no vaccine or effective medications for COVID-19 were known at the time, outbreak management relied on non-pharmacologic public health interventions including isolation, quarantine, enhanced social distancing, and enhanced cleaning (An Pan 2020; Office of the Chief Medical Officer of Health 2020). These interventions faced challenges in the shelter outbreaks due to insufficient space to implement physical distancing, inadequate resources to meet the complex needs of clients, and lack of effective communication routes

to disseminate outbreak information among people experiencing homelessness or unstable housing. Despite standard outbreak protocols, epidemiologic analysis of the outbreaks showed continuous propagation with at least two generations of spread. Rapid and innovative action was necessary.

Drink sharing was identified as the likely source of infection for 8 out of 24 (33%) lab-confirmed COVID-19 cases from Calgary's largest shelter outbreak. A supportive housing site also had a cluster of COVID-19 positive cases that were linked through drinking alcohol out of a shared container. Drink sharing is a high-risk activity for COVID-19 transmission due to direct saliva contact (Mungmungpantipantip and Wiwanitkit 2020). Consultation with shelters, peer groups, and outreach workers confirmed that drink sharing was a frequently observed behaviour, particularly with alcohol-containing beverages. All groups felt that an intervention that reduced drink sharing would significantly decrease COVID-19 transmission within the population.

Intervention

Disposable cups were proposed as a harm reduction intervention to empower people who share beverages and are experiencing homelessness or unstable housing to reduce their COVID-19 risk. Consulted stakeholders included shelters, people with lived experience with homelessness or unstable housing, and outreach services. These groups agreed that the disposable cups could decrease disease transmission among their target populations in an empowering and non-stigmatizing way.

Unintended impacts from the cups were explored prior to implementation. Stakeholders agreed that there was a high risk of litter from the cups. To mitigate this risk, fully biodegradable materials were preferred over plastic cups. Ultimately, the initial pilot used recyclable but non-biodegradable paper cups

from a local donation. A fully biodegradable supply was to be secured if the pilot proved successful. Litter was closely inquired into during interviews to follow any increases and advise further risk mitigation. The pilot project was named “Cups for COVID” and began in late May 2020.

Key players and collaborators

Peer group for consultation

- Alberta Addicts Who Educate and Advocate Responsibly (AAWEAR): a peer-led group of Albertans with histories of substance use who support the community through outreach work and advocacy. We consulted with AAWEAR for guidance on the Cups for COVID project. They agreed that the cups would likely be useful as a harm reduction tool, though voiced concerns about potential increases in litter.

Emergency shelter and outreach

- Calgary Drop-In & Rehab Centre (“The DI”): the largest emergency shelter in Calgary, with a 950-occupant capacity during normal operations. During the Cups for COVID project, the DI was running at a limited capacity of between 227 and 379 occupants.
- Alpha House Society: a harm-reduction-focused non-profit organization that operates a shelter that is inclusive of people who use drugs and alcohol, and collaborates with a variety of government and community-led street outreach services. Affiliated groups that specifically collaborated with Cups for COVID included the:
 - Encampment team, who support individuals sleeping rough with resource navigation and access to food, medical care, and sleeping bags.
 - Peer outreach workers, comprised of individuals with lived experience with homelessness and a specific focus on Indigenous representation. These workers reach out to urban individuals experiencing homelessness to provide resources, safe supplies, and general community support.

Local healthcare services: operated under Alberta Health Services

- Safeworks Connect: a harm-reduction-focused program operating out of the Sheldon M. Chumir Health Centre located in downtown Calgary. Safeworks Connect provides safer substance use supplies and information on services and resources to people who use drugs in the downtown core.

- Safeworks Outreach: a harm-reduction-focused community outreach program. Safeworks Outreach works from a labelled vehicle to deliver safer substance use supplies and basic social and medical support to people who use drugs throughout the city.

Permanent supportive housing

- YW Calgary: a 25-unit apartment-style complex that provides housing and supports for female (including transgendered women), two-spirited, and non-binary individuals.

Population, public, and Indigenous health

- The Communicable Disease Control team provided epidemiologic support to identify outbreaks and conduct ongoing surveillance.

Implementation

Ethics and evaluation processes were established prior to operationalizing the project. The *A pRoject Ethics Community Consensus Initiative* (ARECCI) screening tool (Alberta Innovates 2020) categorized the project as Quality Improvement and not requiring formal ethics approval.

The Alberta Improvement Way (AIW) framework (Alberta Health Services 2020) was used to compose a Quality Improvement proposal. Indicators were drafted to evaluate processes and outcomes. Quantitative indicators were gathered through inventory tracking in collaboration with site managers. Qualitative indicators were gathered through semi-structured interviews with front-line employees. Epidemiologic data from emergency shelter, supportive housing, and street encampment outbreaks were gathered prior to and throughout the intervention.

The interview questions used were as follows:
Process:

- Have you received a supply of cups?
- How many cups were given to your site?
- Have you been actively distributing cups to clients? If not, how have you been distributing cups?
- Do you have a point of contact to reach out to if you require more cups?

Outcome:

- How many cups has your site gone through between [Date 1] and [Date 2], 2020?

- What are your thoughts on the cups?
- What are clients' thoughts on the cups?
- Are clients requesting cups?
- Do you think that the cups lead to safer infection control practices?
- Do you think the program overall adds value?
- Do you think the cups are effective as a harm reduction tool?
- Have you or others noticed increased litter from the cups?

A donation of 4000 paper cups was received in late May 2020 to begin operations. A process map was drafted and the cups were distributed to participating sites and services, which included The DI, Safeworks Connect, Safeworks Outreach, Alpha House Society, and YW Calgary.

Observed impact

Inventory tracking is summarized in Table 1. Alpha House paused their outreach services for the week prior to the data collection, which affected the proportion of cups used. The DI received an external donation of an additional 4000 cups, which is included as part of their cups delivered.

Interview data are summarized in Table 2. Staff observed positive behaviour change with the cups, particularly among people who use alcohol and could receive health education. Staff at YW Calgary and The DI noted that people who previously drank alcohol in shared containers began to regularly use individual disposable cups to reduce their COVID-19 risk. The cups were also widely felt to increase COVID-19 awareness, engage clients in disease prevention measures, and decrease stigma around alcohol use. Safeworks Outreach serves a high volume of clients experiencing homelessness or unstable housing, with a large proportion of clients using alcohol. Outreach staff felt that the cups were useful overall, but the brevity of interactions limited the health education value.

Providers whose clients do not predominantly use alcohol, such as Safeworks Connect, found that the cups were of less value. Their clients were usually requesting water in a resealable bottle.

Litter was explored during interviews. All facilities noted that cups were being appropriately disposed of. Most outreach programs did not see litter from the cups, except for one Alpha

House outreach group who saw ~50% of the cups being littered.

Epidemiologic trends were tracked throughout the intervention. The last cases from shelter outbreak sites were diagnosed and isolated on May 27th. The cups were distributed to sites between May 27th and June 1st. As of June 10th, no further COVID-19 cases were found at any of the outbreak sites, despite continued surveillance and over 250 tests performed. Correlating epidemiologic trends to the intervention was limited by an overall Calgary-wide decrease in COVID-19 cases and confounding with the various outbreak containment efforts simultaneously implemented.

The topic of distributing water bottles versus cups was discussed frequently and there was a range of opinions. Resealable water bottles were highly requested at sites with people who use drugs, such as Safeworks Connect, for preventing heat stroke and dehydration from stimulant use. Some people who use alcohol preferred water bottles because they are more concealable than cups when drinking outdoors. One client mentioned that there is less legal liability if a group is drinking in public with a shared bottle because only one person would be fined with a shared bottle while the entire group would be fined if everyone had their own cup. The YW supportive housing site reported that historically their clientele would frequently misplace and reuse water bottles, increasing container sharing.

Lessons learned

Results suggest that the cups are an effective harm reduction tool that empowers people who use alcohol and are experiencing homelessness or unstable housing to reduce COVID-19 transmission. Service providers witnessed behaviour change in clientele after the introduction of the disposable cups. People who would often share containers began regularly requesting and using the disposable cups to reduce their COVID-19 risk. The cups provided an opportunity to spread knowledge about COVID-19 and infection prevention in a non-stigmatizing way that empowered individuals to drink more safely without requiring cessation. People who did not use alcohol had little use for the cups, which supports this intervention's role as an alcohol-focused harm reduction tool.

Table 1 Inventory tracking at each site between June 1st and 24th. Safeworks Outreach stored the entire stock of 4000 cups and used them as needed directly from the storage, so a proportion was not calculated

Facility	Cups delivered May 27	Total cups used	Percent cups used
Alpha House Outreach	1100	600	55
The DI	5000	3700	74
Safeworks Outreach	n/a	150	n/a
Safeworks Connect	100	5	5
YW Calgary	200	200	100

Table 2 Summary of responses from interviews after implementation of Cups for COVID

Service provider	Type of service/facility	Interview responses
The Drop-In & Rehab Centre	Emergency shelter for people experiencing homelessness	<p>Operations: staff actively handed out cups to clients among the floors that clients resided on. Staff felt that keeping track of cups and acquiring new ones was a straightforward process.</p> <p>Infection prevention value: staff thought that the disposable cups led to decreased drink sharing. They observed groups using individual cups instead of sharing a container. Clients frequently approached staff to request cups. The site used the cups alongside other promotional materials, such as posters to promote COVID-19 and health awareness among clients.</p> <p>Harm reduction value: staff thought the cups were analogous to distributing disposable crack pipe mouthpieces. They also thought the cups reduced the stigma around drinking and were effective for engaging clients in discussions around COVID-19 and infection prevention.</p> <p>Litter: staff reported no change in litter and frequently observed proper disposal of used cups.</p> <p>Other: bottles were often requested by clients and were provided by the site. Staff said that bottles tend to have high rates of reuse and sharing. Some clients preferred bottles over cups because of easier transporting and better concealing when they drink alcohol outdoors.</p>
Safeworks Connect	Facility for safer substance use supplies and resources	<p>Operations: staff kept the cups in their main office and actively offered them to their clientele.</p> <p>Infection prevention value: staff did not think that the cups were desired by their clientele. Clientele generally requested either supplies for drug use or bottles filled with water.</p> <p>Harm reduction value: staff thought that cups would provide harm reduction value among people who use alcohol. Clientele at Safeworks Connect primarily request supplies for drug use and do not report frequent alcohol use.</p> <p>Litter: not applicable, since only a few cups were given out.</p>
Safeworks Outreach	Healthcare outreach service for safer substance use supplies and resources	<p>Operations: bulk cups were light and transportable for outreach work. Staff distributed cups to the subset of clients who were observed sharing alcohol containers. Interactions with clients were very brief, so limited health education was provided.</p> <p>Infection prevention value: staff thought that the cups were very useful for infection prevention among people who use alcohol. Staff noted that they often have very brief interactions with clients, so there were fewer opportunities to provide education when compared with other outreach services.</p> <p>Harm reduction value: cups were useful for people using alcohol and were a useful harm reduction tool. However, they provided limited value for people who do not regularly drink alcohol.</p> <p>Litter: staff did not notice any litter increases.</p> <p>Other comments: clients often requested a bottle or resealable container for repeat usage and easier transportability. Staff were unsure whether bottles would lead to better infection prevention practices among their clientele.</p>
Alpha House Outreach	Non-profit, peer-led, outreach service	<p>Operations: peer support workers assembled kits with health promotion materials that included the disposable cups, water bottles with educational labels to discourage drink sharing, and t-shirts encouraging hand washing.</p>

Table 2 (continued)

Service provider	Type of service/facility	Interview responses
YW Calgary	Supportive housing for female and non-binary clients	<p>Infection prevention value: encampment outreach staff thought that the cups were very useful to reinforce and demonstrate teachings around COVID-19. Peer workers felt that the cups were only useful for those who share alcohol (~50% of clientele). Among people they serve who use alcohol, ~50% accepted and used the cups.</p> <p>Harm reduction value: all staff thought that the cups were useful as a harm reduction tool among people who use alcohol.</p> <p>Litter: the encampment team did not notice an increase in litter. The peer group noticed litter from the cups in about half of the locations that they distributed to.</p> <p>Operations: staff actively distributed cups to clients and kept them in the on-site offices. Staff also drank from the cups (without alcohol) to model safer drinking behaviour.</p> <p>Infection prevention value: staff had compelling stories of multiple people routinely requesting disposable cups before going to drink. Prior to the disposable cups, the residents would share reusable cups and bottles.</p> <p>Harm reduction value: “cups are a vector for health education daily”. Groups were still able to drink together, but used separate cups and engaged in COVID-19 prevention.</p> <p>Litter: cups were always properly disposed of in the garbage, even among people who tend to leave reusable cups and bottles around.</p> <p>Other: disposable cups were greatly preferred over previously available options, which included reusable cups and bottles. Staff noted much less reuse and sharing with the disposable cups.</p>

Resealable bottles were requested frequently by clients for various reasons. The link between resealable bottles and infection prevention is unclear, but would be of value for future studies. Resealable water bottles are requested among people who use drugs for other health benefits, mainly preventing dehydration.

Litter was observed much less than anticipated. Sites that had clients residing in a fixed location noticed a decrease or no change in litter in the area. One outreach team noticed increased litter from the cups. These findings strengthen the importance of biodegradable materials for future sustainability and social acceptability of this intervention, particularly for outreach work. Litter monitoring and biodegradable cups will be recommended for all services moving forward.

Implications

The findings have broad implications for policy and programming. Effective harm reduction interventions can often use readily available tools, such as paper straws for safer intranasal drug use or disposable cups for alcohol use. These interventions have the benefit of being rapidly implementable. The Cups for COVID project took only a few days to operationalize and a

few weeks to evaluate, optimize, and sustainably implement. These low-cost, rapidly implementable strategies are of particular value in challenging socio-political environments facing budget restrictions.

The frequent request for resealable water bottles was a multifaceted issue that has important implications. Distributing resealable water bottles is a simple intervention to prevent dehydration and heat stroke among people who use drugs. Increased water bottle availability may also reduce the incidence of drink sharing in certain sites, but the association between water bottle use and drink sharing needs to be explored further.

Some people who drink outdoors reported preferring to share one alcohol container among a group, as it carries less legal risk than using separate cups. This finding suggests that criminalization of public drinking is contributing to drink sharing among people without access to private homes and consequently is increasing communicable disease transmission. Exploration into policy alternatives to criminalized public drinking is warranted, particularly in the context of COVID-19 outbreaks among people who are experiencing homelessness or unstable housing. Outbreaks among people experiencing homelessness or unstable housing also provide

another incentive for governments and non-profits to prioritize the provision of affordable housing.

The Cups for COVID pilot helped strengthen collaborative relationships with community service providers. Stemming from the project, health authorities have worked with community groups to increase COVID-19 testing among marginalized individuals, and have allied with Indigenous groups, such as Bear Clan Patrol, to provide personal protective equipment to support their outreach work. Alpha House Society integrated the cups into a broader health promotion outreach package with t-shirts, water bottles, and cups. In a rapid 3-week timeframe, the Cups for COVID project empowered marginalized peoples and strengthened community action to stop the spread of the pandemic in Calgary.

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Compliance with ethical standards

Conflict of interest Work by Steer KJD, Klassen DC, O’Gorman C, Webster M, Mitchell M, Krichevsky L, Benham JL, and Schindler RS was financially supported from employment with Alberta Health Services.

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